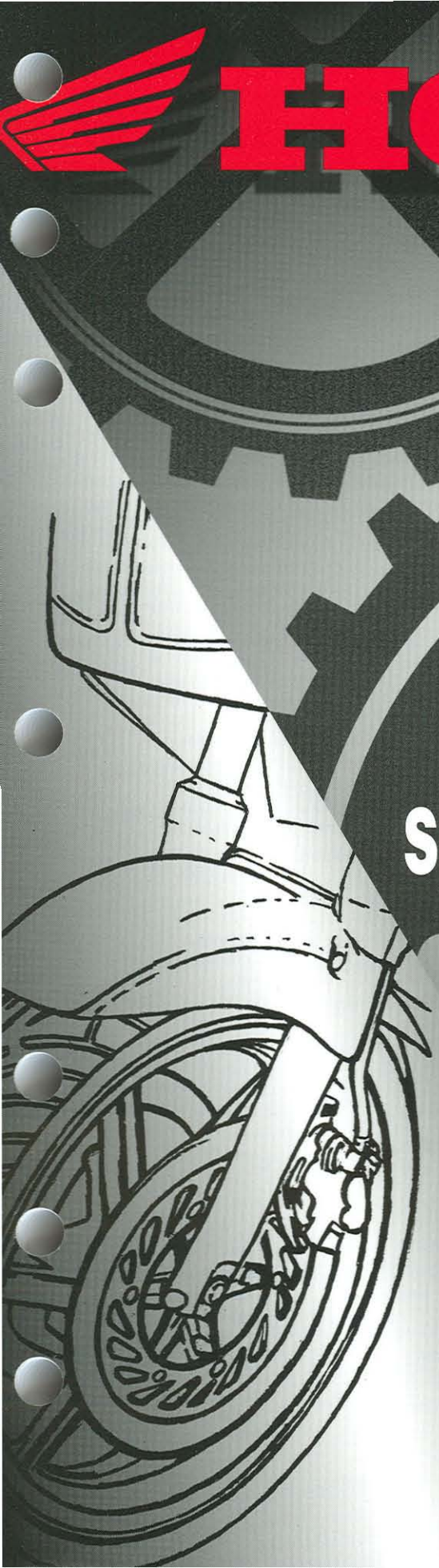
HONDA

SERVICE MANUAL



CB900F
919

HOW TO USE THIS MANUAL

This service manual describes the service procedures for the CB900F.

Follow the Maintenance Schedule (Section 3) recommendations to ensure that the vehicle is in peak operating condition.

Performing the first scheduled maintenance is very important. It compensates for the initial wear that occurs during the break-in period.

Sections 1 and 3 apply to the whole motorcycle. Section 2 illustrates procedures for removal/installation of components that may be required to perform service described in the following sections.
Sections 4 through 19 describe parts of the motorcycle, grouped according to location.

Find the section you want on this page, then turn to the table of contents on the first page of that section.

Most sections start with an assembly or system illustration, service information and troubleshooting for the section. The subsequent pages give detailed procedure.

If you don't know the source of the trouble, go to section 22, Troubleshooting.

Your safety, and the safety of others, is very important. To help you make informed decisions we have provided safety messages and other information throughout this manual. Of course, it is not practical or possible to warn you about all the hazards associated with servicing this vehicle. You must use your own good judgement.
You will find important safety information in a variety of forms including:

- Safety Labels – on the vehicle
- Safety Messages – preceded by a safety alert symbol ⚠ and one of three signal words, DANGER, WARNING, or CAUTION.
  These signal words mean:

⚠ DANGER You WILL be KILLED or SERIOUSLY HURT if you don't follow instructions.

⚠ WARNING You CAN be KILLED or SERIOUSLY HURT if you don't follow instructions.

⚠ CAUTION You CAN be HURT if you don't follow instructions.

- Instructions – how to service this vehicle correctly and safely.

As you read this manual, you will find information that is preceded by a **NOTICE** symbol. The purpose of this message is to help prevent damage to your vehicle, other property, or the environment.

CONTENTS

Date of Issue: December 2001

SYMBOLS

The symbols used throughout this manual show specific service procedures. If supplementary information is required pertaining to these symbols, it will be explained specifically in the text without the use of the symbols.

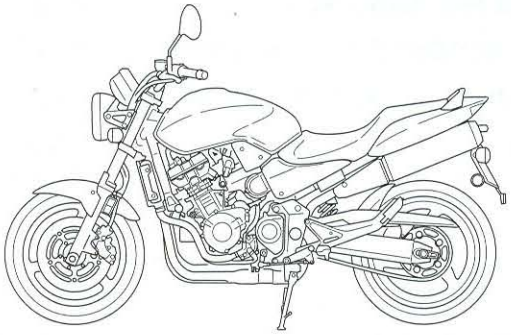
	Replace the part(s) with new one(s) before assembly.
	Use the recommended engine oil, unless otherwise specified.
	Use molybdenum oil solution (mixture of the engine oil and molybdenum grease in a ratio of 1:1)
	Use multi-purpose grease (Lithium based multi-purpose grease NLGI #2 or equivalent
	Use molybdenum disulfide grease (containing more than 3% molybdenum disulfide, NLGI #2 or equivalent. Example: Molykote® BR-2 plus manufactured by Dow Corning U.S.A. Multi-purpose M-2 manufactured by Mitsubishi Oil, Japan
	Use molybdenum disulfide paste (containing more than 40% molybdenum disulfide, NLGI #2 or equivalent. Example: Molykote® G-n Paste manufactured by Dow Corning U.S.A. Honda Moly 60 (U.S.A. only) Rocol ASP manufactured by Rocol Limited, U.K. Rocol Paste manufactured by Sumico Lubricant, Japan
	Use silicone grease.
	Apply a locking agent. Use a medium strength locking agent unless otherwise specified.
	Apply sealant.
	Use DOT 4 brake fluid. Use the recommended brake fluid unless otherwise specified.
	Use fork or suspension fluid.

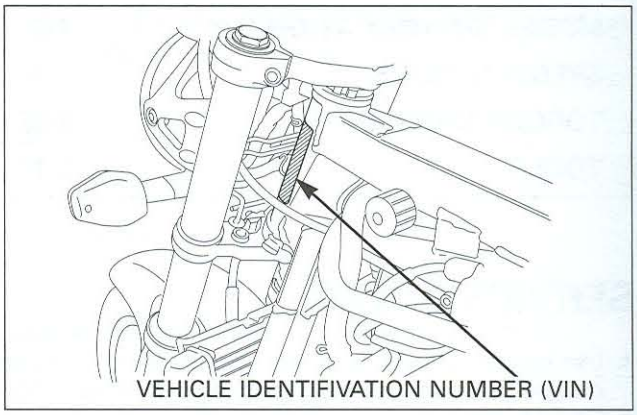
1. GENERAL INFORMATION

SERVICE RULES

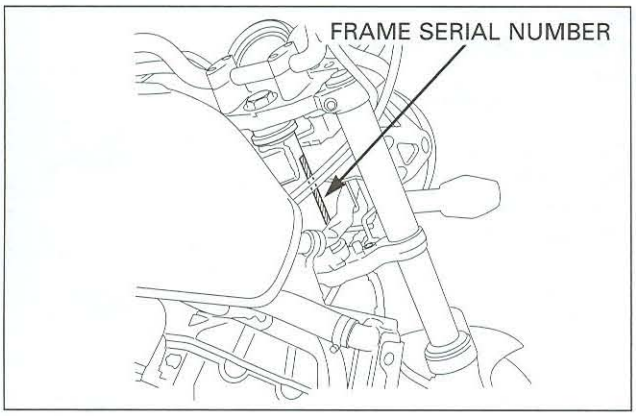
1. Use genuine Honda or Honda-recommended parts and lubricants or their equivalents. Parts that don't meet Honda's design specifications may cause damage to the motorcycle.
2. Use the special tools designed for this product to avoid damage and incorrect assembly.
3. Use only metric tools when servicing the motorcycle. Metric bolts, nuts and screws are not interchangeable with English fasteners.
4. Install new gaskets, O-rings, cotter pins, and lock plates when reassembling.
5. When tightening bolts or nuts, begin with the larger diameter or inner bolt first. Then tighten to the specified torque diagonally in incremental steps unless a particular sequence is specified.
6. Clean parts in cleaning solvent upon disassembly. Lubricate any sliding surfaces before reassembly.
7. After reassembly, check all parts for proper installation and operation.
8. Route all electrical wires as shown on pages 1-22 through 1-32, Cable and Harness Routing.

MODEL IDENTIFICATION

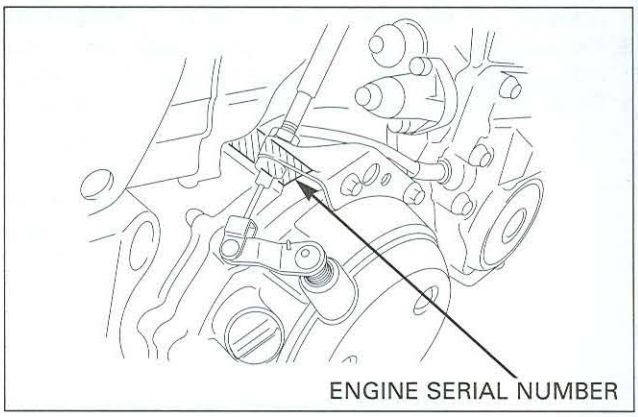




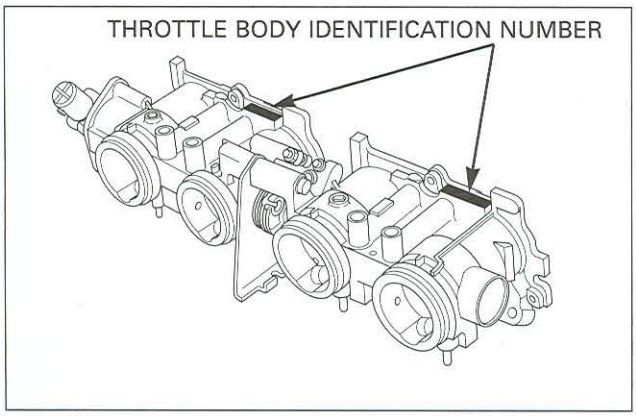
The Vehicle Identification Number (VIN) is located on the left side of the frame near the steering head.



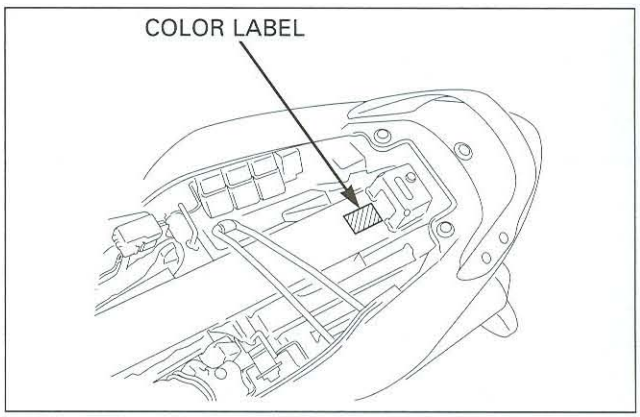
The engine serial number is stamped on the right side of the upper crankcase.



The frame serial number is stamped on the right side of the steering head.



The throttle body identification number is stamped on the intake side of the throttle body as shown.



The color label is attached as shown. When ordering color-coded parts, always specify the designated color code.

SPECIFICATIONS

GENERAL

ITEM			SPECIFICATIONS
DIMENSIONS	Overall length		2,125 mm (83.7 in)
	Overall width		750 mm (29.5 in)
	Overall height		1,085 mm (42.7 in)
	Wheelbase		1,460 mm (57.5 in)
	Seat height		795 mm (31.3 in)
	Footpeg height		345 mm (13.6 in)
	Ground clearance		145 mm (5.7 in)
	Dry weight	Except California type	194 kg (428 lbs)
		California type	195 kg (430 lbs)
	Curb weight	Except California type	218 kg (481 lbs)
		California type	219 kg (483 lbs)
	Maximum weight capacity		174 kg (384 lbs)
FRAME	Frame type		Diamond
	Front suspension		Telescopic fork
	Front axle travel		109 mm (4.3 in)
	Rear suspension		Swingarm
	Rear axle travel		128 mm (4.7 in)
	Front tire size		120/70 ZR 17 (58W), 120/70 ZR 17 M/C (58W)
	Rear tire size		180/55 ZR 17 (73W), 180/55 ZR 17 M/C (73W)
	Front tire brand		BT56F RADIAL N (Bridgestone) TX15 (Michelin)
	Rear tire brand		BT56R RADIAL G (Bridgestone) TX25 (Michelin)
	Front brake		Hydraulic double disc
	Rear brake		Hydraulic single disc
	Caster angle		25°
	Trail length		98 mm (3.9 in)
	Fuel tank capacity		19.0 liter (5.02 US gal, 4.18 Imp gal)
ENGINE	Cylinder arrangement		4 cylinders in-line, inclined 30° from vertical
	Bore and stroke		71.0 X 58.0 mm (2.80 X 2.28 in)
	Displacement		919 cm^3 (56.1 cu-in)
	Compression ratio		10.8 : 1
	Valve train		Chain driven, DOHC
	Intake valve	opens — at 1 mm	10° BTDC
		closes — (0.04 in) lift	30° ABDC
	Exhaust valve	opens	35° BBDC
		closes	5° ATDC
	Lubrication system		Forced pressure and wet sump
	Oil pump type		Trochoid
	Cooling system		Liquid cooled
	Air filtration		Paper element
	Engine dry weight		68 kg (150 lbs)
	Firing order		1 - 2 - 4 - 3

GENERAL (Cont'd)

ITEM		SPECIFICATIONS
CARBURATION	Type	PGM-FI (Programmed Fuel Injection)
	Throttle bore	36 mm (1.4 in)
DRIVE TRAIN	Clutch system	Multi-plate, wet
	Clutch operation system	Cable operating
	Transmission	Constant mesh, 6-speeds
	Primary reduction	1.52 (76/50)
	Final reduction	2.688 (43/16)
	Gear ratio 1st	2.769 (36/13)
	2nd	2.000 (26/13)
	3rd	1.600 (24/15)
	4th	1.368 (26/19)
	5th	1.227 (27/22)
	6th	1.130 (26/23)
	Gearshift pattern	Left foot operated return system, 1 – N – 2 – 3 – 4 – 5 – 6
ELECTRICAL	Ignition system	Computer-controlled digital transistorized with electric advance
	Starting system	Electric starter motor
	Charging system	Triple phase output alternator
	Regulator/rectifier	SCR shorted/triple phase, full wave rectification
	Lighting system	Battery

Unit: mm (in)

LUBRICATION SYSTEM

ITEM		STANDARD	SERVICE LIMIT
Engine oil capacity	After draining	3.5 liter (3.7 US qt, 3.1 Imp qt)	—
	After draining/filter change	3.6 liter (3.8 US qt, 3.2 Imp qt)	—
	After disassembly	4.4 liter (4.6 US qt, 3.9 Imp qt)	—
Recommended engine oil		Pro Honda GN4 or HP4 (without molybdenum additives) 4-stroke oil (USA & Canada), or Honda 4-stroke oil (Canada only), or an equivalent motor oil API service classification SG or Higher except oils labeled as energy conserving on the API service label. JASO T903 standard MA Viscosity: SAE 10W–40	—
Oil pressure at oil pressure switch		490 kPa (5.0 kgf/cm², 71 psi) at 6,000 min⁻¹ (rpm)/(80°C/176°F)	—
Oil pump rotor	Tip clearance	0.15 (0.006)	0.20 (0.008)
	Body clearance	0.15 – 0.22 (0.006 – 0.009)	0.35 (0.014)
	Side clearance	0.02 – 0.07 (0.001 – 0.003)	0.10 (0.004)

FUEL SYSTEM (Programmed Fuel Injection)

ITEM		SPECIFICATIONS
Throttle body identification number	Except California type	GQ34C
	California type	GQ34B
Starter valve vacuum difference		2664 Pa (20 mm Hg)
Base throttle valve for synchronization		No.2
Idle speed		1,200 ± 100 min⁻¹ (rpm)
Throttle grip free play		2 – 4 mm (1/16 – 3/16 in)
Intake air temperature sensor resistance (at 20°C/68°F)		1 – 4 kΩ
Engine coolant temperature sensor resistance (at 20°C/68°F)		2.3 – 2.6 kΩ
Fuel injector resistance (at 20°C/68°F)		11.1 – 12.3 Ω
PAIR solenoid valve resistance (at 20°C/68°F)		20 – 24 Ω
Cam pulse generator peak voltage (at 20°C/68°F)		0.7 V minimum
Ignition pulse generator peak voltage (at 20°C/68°F)		0.7 V minimum
Manifold absolute pressure at idle		200 – 250 mm Hg
Fuel pressure at idle		343 kPa (3.5 kgf/cm², 50 psi)
Fuel pump flow (at 12 V)		256 cm³ (8.7 US oz, 9.0 Imp oz) minimum/10 seconds

COOLING SYSTEM

ITEM		SPECIFICATIONS
Coolant capacity	Radiator and engine	3.2 liter (3.38 US qt, 2.82 Imp qt)
	Reserve tank	0.8 liter (0.85 US qt, 0.70 Imp qt)
Radiator cap relief pressure		108 – 137 kPa (1.1 – 1.4 kgf/cm², 16 – 20 psi)
Thermostat	Begin to open	80 – 84 °C (176 – 183 °F)
	Fully open	95°C (203 °F)
	Valve lift	8 mm (0.3 in) minimum
Recommended antifreeze		Pro Honda Coolant or an equivalent high quality ethylene glycol antifreeze containing corrosion protection inhibitors specifically recommended for use in aluminum engines
Standard coolant concentration		50 – 50% mixture with soft water

CYLINDER HEAD/VALVES

Unit: mm (in)

ITEM			STANDARD	SERVICE LIMIT
Cylinder compression			1,275 kPa (13.0 kgf/cm², 185 psi) at 350 min⁻¹ (rpm)	—
Valve clearance		IN	0.16 ± 0.03 (0.006 ± 0.001)	—
		EX	0.25 ± 0.03 (0.010 ± 0.001)	—
Camshaft	Cam lobe height	IN	36.040 – 36.280 (1.419 – 1.428)	36.01 (1.42)
		EX	35.800 – 36.040 (1.409 – 1.419)	35.77 (1.41)
	Runout		—	0.05 (0.002)
	Oil clearance		0.020 – 0.062 (0.008 – 0.0025)	0.10 (0.004)
Valve lifter	Valve lifter O.D.		25.978 – 25.993 (1.0228 – 1.0233)	25.97 (1.022)
	Valve lifter bore I.D.		26.010 – 26.026 (1.0240 – 1.0246)	26.04 (1.025)
Valve, valve guide	Valve stem O.D.	IN	4.475 – 4.490 (0.1762 – 0.1768)	4.465 (0.1758)
		EX	4.465 – 4.480 (0.1758 – 0.1764)	4.455 (0.1754)
	Valve guide I.D.	IN/EX	4.500 – 4.512 (0.1772 – 0.1776)	4.540 (0.1787)
	Stem-to-guide clearance	IN	0.010 – 0.037 (0.0004 – 0.0015)	0.075 (0.0030)
		EX	0.020 – 0.047 (0.0008 – 0.0019)	0.085 (0.0033)
	Valve guide projection above cylinder head	IN	14.5 – 14.7 (0.57 – 0.58)	—
		EX	14.8– 15.0 (0.58 – 0.59)	—
	Valve seat width	IN/EX	0.90 – 1.10 (0.035 – 0.043)	1.5 (0.06)
Valve spring free length		IN	40.9 (1.61)	40.08 (1.578)
		EX	40.9 (1.61)	40.08 (1.578)
Cylinder head warpage			—	0.10 (0.004)

CLUTCH/GEARSHIFT LINKAGE

Unit: mm (in)

ITEM			STANDARD	SERVICE LIMIT
Clutch lever free play			10 – 20 (3/8 – 13/16)	—
Clutch		Spring free length	48.8 (1.92)	47.5 (1.87)
		Disc thickness	2.92 – 3.08 (0.115 – 0.121)	2.6 (0.10)
		Plate warpage	—	0.30 (0.012)
Clutch outer guide		I.D.	24.994 – 25.004 (0.9840 – 0.9844)	25.01 (0.985)
		O.D.	34.975 – 34.991 (1.3770 – 1.3776)	34.97 (1.377)
Mainshaft O.D. at clutch outer guide			24.980 – 24.993 (0.9835 – 0.9840)	24.96 (0.983)
Shift fork, fork shaft	I.D.		12.000 – 12.021 (0.4724 – 0.4733)	12.03 (0.474)
	Claw thickness		5.93 – 6.00 (0.233 – 0.236)	5.9 (0.23)
	Shift fork shaft O.D.		11.957 – 11.968 (0.4707 – 0.4712)	11.95 (0.470)

ALTERNATOR/STARTER CLUTCH

Unit: mm (in)

ITEM	STANDARD	SERVICE LIMIT
Starter driven gear boss O.D.	51.699 – 51.718 (2.0354 – 2.0361)	51.684 (2.0348)

CRANKCASE/PISTON/CYLINDER

Unit: mm (in)

ITEM			STANDARD	SERVICE LIMIT
Cylinder	I.D.		71.000 – 71.015 (2.7953 – 2.7963)	71.10 (2.795)
	Out of round		—	0.10 (0.004)
	Taper		—	0.10 (0.004)
	Warpage		—	0.05 (0.002)
Piston, piston rings	Piston mark direction		"IN" mark facing toward the intake side	—
	Piston O.D.		70.965 – 70.985 (2.7939 – 2.7947)	70.90 (2.791)
	Piston O.D. measurement point		15 mm (0.6 in) from bottom of skirt	—
	Piston pin bore I.D.		17.002 – 17.008 (0.6694 – 0.6696)	17.03 (0.670)
	Piston pin O.D.		16.993 – 17.000 (0.6690 – 0.6693)	16.98 (0.669)
	Piston-to-piston pin clearance		0.002 – 0.015 (0.0001 – 0.0006)	—
	Piston ring-to-ring groove clearance	Top	0.030 – 0.065 (0.0012 – 0.0026)	0.08 (0.003)
		Second	0.015 – 0.045 (0.0006 – 0.0018)	0.07 (0.003)
	Piston ring end gap	Top	0.28 – 0.38 (0.011 – 0.015)	0.5 (0.02)
		Second	0.40 – 0.55 (0.016 – 0.022)	0.7 (0.03)
		Oil (side rail)	0.2 – 0.7 (0.01 – 0.03)	0.9 (0.04)
Cylinder-to-piston clearance			0.015 – 0.050 (0.0006 – 0.0020)	—
Connecting rod small end I.D.			17.016 – 17.034 (0.6699 – 0.6706)	17.04 (0.671)
Connecting rod-to-piston pin clearance			0.016 – 0.041 (0.0006 – 0.0016)	—
Crankpin oil clearance			0.030 – 0.052 (0.0012 – 0.0020)	0.06 (0.002)

CRANKSHAFT/TRANSMISSION

Unit: mm (in)

ITEM			STANDARD	SERVICE LIMIT
Crankshaft	Side clearance		0.05 – 0.20 (0.002 – 0.008)	0.30 (0.012)
	Runout		——	0.30 (0.012)
	Main journal oil clearance		0.017 – 0.035 (0.0007 – 0.0014)	0.04 (0.002)
Transmission	Gear I.D.	M5, M6	28.000 – 28.021 (1.1024 – 1.1032)	28.04 (1.104)
		C1	24.000 – 24.021 (0.9449 – 0.9547)	24.04 (0.946)
		C2, 3, 4	31.000 – 31.025 (1.2205 – 1.2215)	31.04 (1.222)
	Bushing O.D.	M5, 6	27.959 – 27.980 (1.1007 – 1.1016)	27.94 (1.100)
		C2	30.955 – 30.980 (1.2187 – 1.2197)	30.93 (1.218)
		C3, 4	30.950 – 30.975 (1.2185 – 1.2195)	30.93 (1.218)
	Bushing I.D.	M5	24.985 – 25.006 (0.9837 – 0.9845)	25.02 (0.985)
		C2	27.985 – 28.006 (1.1018 – 1.1026)	28.02 (1.103)
	Gear-to-bushing clearance	M5, 6	0.020 – 0.062 (0.0008 – 0.0024)	0.10 (0.004)
		C2	0.020 – 0.070 (0.0008 – 0.0028)	0.11 (0.004)
		C3, 4	0.025 – 0.075 (0.0010 – 0.0030)	0.11 (0.004)
	Mainshaft O.D.	M5	24.967 – 24.980 (0.9830 – 0.9835)	24.96 (0.983)
		Clutch outer guide	24.980 – 24.993 (0.9835 – 0.9840)	24.96 (0.983)
	Countershaft O.D.	C2	27.967 – 27.980 (1.1011 – 1.1016)	27.96 (1.101)
	Bushing-to-shaft clearance	M5	0.005 – 0.039 (0.0002 – 0.0015)	0.08 (0.003)
		C2	0.005 – 0.039 (0.0002 – 0.0015)	0.08 (0.003)

FRONT WHEEL/SUSPENSION/STEERING

Unit: mm (in)

ITEM		STANDARD	SERVICE LIMIT
Minimum tire tread depth		—	1.5 (0.06)
Cold tire pressure	Driver only	250 kPa (2.50 kgf/cm², 36 psi)	—
	Driver and passenger	250 kPa (2.50 kgf/cm², 36 psi)	—
Axle runout		—	0.2 (0.01)
Wheel rim runout	Radial	—	2.0 (0.08)
	Axial	—	2.0 (0.08)
Wheel balance weight		—	60 g (2.1 oz) max.
Fork	Spring free length	282.3 (11.1)	276.7 (10.89)
	Tube runout	—	0.20 (0.008)
	Recommended fork fluid	Pro Honda Suspension Fluid SS-8	—
	Fluid level	155 (6.1)	—
	Fluid capacity	463 ± 2.5 cm³ (15.7 ± 0.08 US oz, 16.3 ± 0.09 Imp oz)	—
Steering head bearing pre-load		10 – 15 N•m (1.0 – 1.5 kgf)	—

REAR WHEEL/SUSPENSION

Unit: mm (in)

ITEM			STANDARD	SERVICE LIMIT
Minimum tire tread depth			—	2.0 (0.08)
Cold tire pressure	Driver only		290 kPa (2.90 kgf/cm², 42 psi)	—
	Driver and passenger		290 kPa (2.90 kgf/cm², 42 psi)	—
Axle runout			—	0.2 (0.01)
Wheel rim runout	Radial		—	2.0 (0.08)
	Axial		—	2.0 (0.08)
Wheel balance weight			—	60 g (2.1 oz) max.
Drive chain	Size/link	DID	DID50VA8-114LE	—
		RK	RK50HFOZ5-114LE	—
	Slack		30 – 40 (1.2 – 1.6)	—

HYDRAULIC BRAKE

Unit: mm (in)

ITEM			STANDARD	SERVICE LIMIT
Front	Specified brake fluid		DOT 4	—
	Brake disc thickness		4.3 – 4.7 (0.17 – 0.19)	3.5 (0.14)
	Brake disc runout		—	0.3 (0.012)
	Master cylinder I.D.		14.000 – 14.043 (0.5512 – 0.5529)	14.055 (0.5533)
	Master piston O.D.		13.957 – 13.984 (0.5495 – 0.5506)	13.945 (0.5490)
	Caliper cylinder I.D.	A	30.230 – 30.280 (1.1902 – 1.1921)	30.29 (1.193)
		B	27.000 – 27.050 (1.0630 – 1.0650)	27.06 (1.065)
	Caliper piston O.D.	A	30.148 – 30.198 (1.1869 – 1.1889)	30.14 (1.187)
		B	26.918 – 26.968 (1.0598 – 1.0617)	26.91 (1.059)
Rear	Specified brake fluid		DOT 4	—
	Brake disc thickness		4.8 – 5.2 (0.19 – 0.20)	4.0 (0.16)
	Brake disc runout		—	0.30 (0.012)
	Master cylinder I.D.		12.700 – 12.743 (0.49999 –0.5017)	12.755 (0.5022)
	Master piston O.D.		12.657 – 12.684 (0.4983 – 0.4994)	12.645 (0.4978)
	Caliper cylinder I.D.		38.180 – 38.230 (1.053 – 1.505)	38.24 (1.506)
	Caliper piston O.D.		38.098 – 38.148 (1.4999 – 1.5019)	38.09 (1.500)

BATTERY/CHARGING SYSTEM

ITEM			SPECIFICATIONS
Battery	Capacity		12V – 8.6 Ah
	Current leakage		1.2 mA max.
	Voltage (20°C/68°F)	Fully charged	13.0 – 13.2 V
		Needs charging	Below 12.3 V
	Charging current	Normal	1.2 A/5 – 10 h
		Quick	5.0 A/1 h
Alternator	Capacity		0.38 kW/5,000 min^{-1} (rpm)
	Charging coil resistance (20°C/68°F)		0.1 – 1.0 Ω

IGNITION SYSTEM

ITEM		SPECIFICATIONS
Spark plug	NGK	CR8EH-9 (Standard) / CR9EH-9 (For high speed running)
	DENSO	U24FER9 (Standard) / U27FER9 (For high running)
Spark plug gap		0.8 – 0.9 mm (0.03 – 0.04 in)
Ignition coil peak voltage		100 V minimum
Ignition pulse generator peak voltage		0.7 V minimum
Ignition timing ("F" mark)		8° BTDC at idle

ELECTRIC STARTER

Unit: mm (in)

ITEM	STANDARD	SERVICE LIMIT
Starter motor brush length	12.0 – 13.0 (0.47 – 0.51)	4.5 (0.18)

LIGHTS/METERS/SWITCHES

ITEM			SPECIFICATIONS
Bulbs	Headlight	Hi	12V – 60 W
		Lo	12V – 55 W
	Brake/tail light		12V – 21/5 W X 2
	Turn signal light	Front	12V – 23/8 W X 2
		Rear	12V – 21 W
	License light		12V – 5 W
	Instrument light		12V – 1.7 W X 3
	Turn signal indicator		12V – 1.7 W X 2
	High beam indicator		LED
	Neutral indicator		LED
	Oil pressure indicator		LED
	PGM-FI warning indicator		LED
	Fuel reserve indicator		LED
Fuse	Main fuse		30 A
	PGM-FI fuse		20 A
	Sub fuse		20 A X 1, 10A X 4
Tachometer peak voltage			10.5 V minimum
ECT sensor resistration	80 °C		2.1 – 2.6 k Ω
	120 °C		0.62 – 0.76 k Ω

TORQUE VALUES

FASTENER TYPE	TORQUE N·m (kgf·m, lbf·ft)	FASTENER TYPE	TORQUE N·m (kgf·m, lbf·ft)
5 mm hex bolt and nut	5 (0.5, 3.6)	5 mm screw	4 (0.4, 2.9)
6 mm hex bolt and nut	10 (1.0, 7)	6 mm screw	9 (0.9, 6.5)
8 mm hex bolt and nut	22 (2.2, 16)	6 mm flange bolt (8 mm head, small flange)	10 (1.0, 7)
10 mm hex bolt and nut	34 (3.5, 25)		
12 mm hex bolt and nut	54 (5.5, 40)	6 mm flange bolt (8 mm head, large flange)	12 (1.2, 9)
		6 mm flange bolt (10 mm head) and nut	12 (1.2, 9)
		8 mm flange bolt and nut	26 (2.7, 20)
		10 mm flange bolt and nut	39 (4.0, 29)

- Torque specifications listed below are for important fasteners.
- Others should be tightened to standard torque values listed above.

NOTES: 1. Apply sealant to the threads.
2. Apply a locking agent to the threads.
3. Stake.
4. Apply oil to the threads and flange surface.
5. U-nut.
6. ALOC bolt/screw: replace with a new one.
7. Apply grease to the threads.
8. Apply molybdenum disulfide oil to the threads and seating surface
9. CT bolt

ENGINE

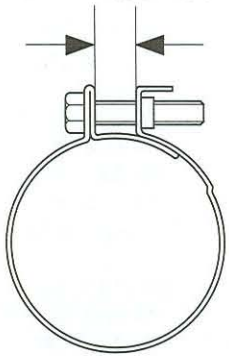
ITEM	Q'TY	THREAD DIA. (mm)	TORQUE N·m (kgf·m, lbf·ft)	REMARKS
MAINTENANCE:				
Spark plug	4	10	12 (1.2, 9)	
Timing hole cap	1	45	18 (1.8, 13)	NOTE 7
Engine oil filter cartridge	1	20	26 (2.7, 20)	NOTE 4
Engine oil drain bolt	1	12	29 (3.0, 22)	
LUBRICATION SYSTEM:				
Oil main gallery sealing bolt (20mm)	1	20	29 (3.0, 22)	NOTE 2
Oil pump cover bolt	1	6	8 (0.8, 5.8)	NOTE 9
Oil cooler bolt (filter boss)	1	20	64 (6.5, 47)	NOTE 4
FUEL SYSTEM (Programmed Fuel Injection):				
ECT (Engine Coolant Temperature)/thermo sensor	1	12	23 (2.3, 17)	
Throttle body insulator band screw	8	5	See page 1-14	
Starter valve lock nut	4	10	2 (0.18, 1.3)	
Starter valve cable stay screw	4	3	1 (0.09, 0.7)	
Pressure regulator mounting bolt	2	6	10 (1.0, 7)	
COOLING SYSTEM:				
Water pump cover flange bolt	2	6	12 (1.2, 9)	NOTE 9
ENGINE MOUNTING:				
Drive sprocket special bolt	1	10	54 (5.5, 40)	

ENGINE (Cont'd)

ITEM	Q'TY	THREAD DIA. (mm)	TORQUE N·m (kgf·m, lbf·ft)	REMARKS
CYLINDER HEAD/VALVES:				
Cylinder head mounting bolt/washer	10	9	48 (4.9, 35)	NOTE 8
Camshaft holder flange bolt	20	6	12 (1.2, 9)	NOTE 4
Cylinder head cover bolt	6	6	10 (1.0, 7)	
Breather plate flange bolt	3	6	12 (1.2, 9)	NOTE 2, 9
PAIR reed valve cover SH bolt	4	6	12 (1.2, 9)	NOTE 9
Cam sprocket flange bolt	4	7	20 (2.0, 14)	NOTE 2
Cam pulse generator rotor flange bolt	2	6	12 (1.2, 9)	NOTE 2
Cylinder head stud bolt (exhaust pipe stud bolt)	8	8	See page 1-14	
CLUTCH/GEARSHIFT LINKAGE:				
Clutch center lock nut	1	22	128 (13.1, 95)	NOTE 3, 4
Clutch spring bolt	5	6	12 (1.2, 9)	
Oil pump driven sprocket bolt	1	6	15 (1.5, 11)	NOTE 2
Shift drum center socket bolt	1	8	23 (2.3, 17)	NOTE 2
Shift drum stopper arm pivot bolt	1	6	12 (1.2, 9)	
Gearshift spindle return spring pin	1	8	22 (2.2, 16)	
ALTERNATOR/STARTER CLUTCH:				
Alternator stator socket bolt	4	6	12 (1.2, 9)	
Starter clutch outer socket bolt	6	8	16 (1.6, 12)	NOTE 2
Flywheel flange bolt	1	10	103 (10.5, 76)	NOTE 4
Starter wire clamp flange bolt	1	6	10 (1.0, 7)	NOTE 9
CRANKCASE/TRANSMISSION:				
Mainshaft bearing set plate bolt	2	6	12 (1.2, 9)	NOTE 2
Gearshift drum bearing/fork shaft set bolt	2	6	12 (1.2, 9)	NOTE 2
Crankcase bolt (Main journal)	10	9	27 (2.8, 20)	NOTE 8
Crankcase bolt	1	10	39 (4.0, 29)	
Crankcase bolt	14	6	12 (1.2, 9)	
Crankcase bolt	2	8	24 (2.4, 17)	
CRANKSHAFT/PISTON/CYLINDER:				
Connecting rod nut	8	8	34 (3.5, 25)	NOTE 4
IGNITION SYSTEM:				
Ignition pulse generator rotor cover bolt	6	8	10 (1.0, 7)	
Ignition pulse generator rotor special bolt	1	10	59 (6.0, 43)	
ELECTRIC STARTER:				
Starter motor terminal nut	1	6	12 (1.2, 9)	
LIGHTS/METERS/SWITCHES:				
Oil pressure switch	1	PT 1/8	12 (1.2, 9)	NOTE 1
Oil pressure switch wire terminal bolt/washer	1	4	2 (0.2, 1.4)	
Neutral switch	1	10	12 (1.2, 9)	

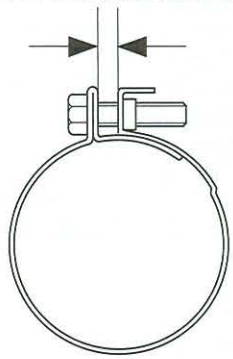
Insulator clamp (Throttle body side):

7 ± 1 mm (0.3 ± 0.04 in)



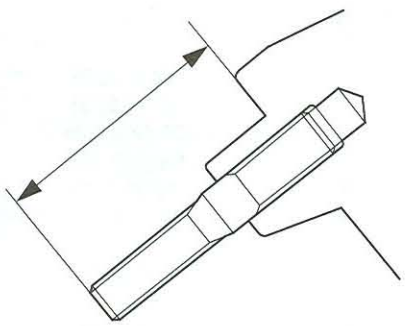
Insulator clamp (Cylinder head side):

7 ± 1 mm (0.3 ± 0.04 in)

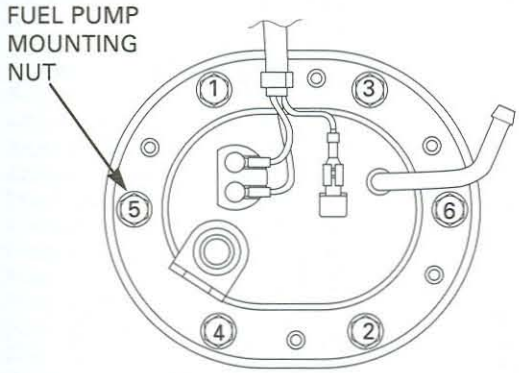


Exhaust pipe stud bolt:

42.5 ± 0.5 mm (1.67 ± 0.02 in)



FRAME

ITEM	Q'TY	THREAD DIA. (mm)	TORQUE N·m (kgf·m, lbf·ft)	REMARKS
FRAME BODY PANELS/EXHAUST SYSTEM:				
Exhaust pipe joint flange nut	8	6	20 (2.0, 14)	
Exhaust pipe mounting nut	1	8	27 (2.8, 20)	
Muffler mounting flange bolt	2	8	27 (2.8, 20)	
Muffler band flange bolt	3	8	27 (2.8, 20)	
FUEL SYSTEM (Programmed Fuel Injection):				
Fuel tube banjo bolt (fuel tank side)	1	12	22 (2.2, 16)	
Fuel tube sealing nut (throttle body side)	1	12	22 (2.2, 16)	
Fuel pump mounting nut	6	6	12 (1.2, 9)	
				
COOLING SYSTEM:				
Cooling fan mounting nut	1	5	3 (0.27, 2.0)	NOTE 2
Fan motor mounting nut	3	5	5 (0.5, 3.6)	
ENGINE MOUNTING:				
Front engine hanger bolt/nut	2	10	50 (5.1, 37)	See page 7-10
Rear upper engine hanger bolt/nut	1	10	50 (5.1, 37)	
Rear lower engine hanger bolt/nut	1	10	50 (5.1, 37)	
Gear shift linkage bolt	1	5	20(2.0,14)	
FRONT WHEEL/SUSPENSION/STEERING:				
Handlebar weight mounting screw	2	6	10 (1.0, 7)	NOTE 6
Front brake disc bolt	12	6	20 (2.0, 14)	NOTE 6
Front axle bolt	1	14	59 (6.0, 43)	
Front axle holder flange bolt	4	8	22 (2.2, 16)	
Front brake hose clamp flange bolt (left front)	1	6	12 (1.2, 9)	
Front brake hose clamp flange bolt (right front)	1	6	12 (1.2, 9)	
Fork socket bolt	2	8	20 (2.0, 14)	NOTE 2
Fork bolt	2	39	22 (2.2, 16)	
Fork top bridge pinch socket bolt	2	8	22 (2.2, 16)	
Fork bottom bridge pinch flange bolt	2	10	39 (4.0, 29)	
Steering bearing adjusting nut	1	26	25 (2.5, 18)	See page 13-29
Steering bearing adjusting nut lock nut	1	26	—	
Steering stem nut	1	24	103 (10.5, 76)	
Front brake hose clamp bolt (steering stem)	1	6	10 (1.0, 7)	

FRAME (Cont'd)

ITEM	Q'TY	THREAD DIA. (mm)	TORQUE N•m (kgf•m, lbf•ft)	REMARKS
REAR WHEEL/SUSPENSION:				
Rear brake disc bolt	4	8	42 (4.3, 31)	NOTE 6
Final driven sprocket nut	5	12	108 (11.0, 80)	NOTE 5
Rear axle nut	1	18	93 (9.5, 69)	NOTE 5
Rear shock absorber upper mounting bolt	1	10	42 (4.3, 31)	
Rear shock absorber upper mounting nut	1	10	42 (4.3, 31)	NOTE 5
Drive chain slider flange bolt	2	6	9 (0.9, 6.5)	NOTE 6
Swingarm pivot nut	1	18	93 (9.5, 69)	
HYDRAULIC BRAKE:				
Front master cylinder reservoir cap screw	2	4	1 (0.1, 0.7)	
Front brake lever pivot bolt	1	6	1 (0.1, 0.7)	
Front brake lever pivot nut	1	6	6 (0.6, 4.3)	
Front brake light switch screw	1	4	1 (0.1, 0.7)	
Front master cylinder mounting bolt	2	6	12 (1.2, 9)	
Front brake caliper assembly torx bolt	8	8	32 (3.3, 24)	NOTE 2
Front brake caliper mounting flange bolt	4	8	30 (3.1, 22)	NOTE 6
Rear master cylinder push rod lock nut	1	8	17 (1.7, 12)	
Rear master cylinder mounting bolt	2	6	10 (1.0, 7)	
Rear brake caliper bracket bolt	1	8	23 (2.3, 17)	
Rear brake caliper pin bolt	1	12	27 (2.8, 20)	
Pad pin	3	10	17 (1.7, 12)	
Pad pin plug	1	10	3 (0.3, 2.2)	
Brake hose oil bolt	3	10	34 (3.5, 25)	
Brake caliper bleeder valve	3	8	6 (0.6, 4.3)	
Step holder mounting bolt	4	8	27 (2.8, 20)	
Rear master cylinder hose joint screw	2	6	10 (1.0, 7)	
LIGHTS/METERS/SWITCHES:				
Side stand switch bolt	1	6	10 (1.0, 7)	NOTE 6
Ignition switch mounting bolt	2	8	25 (2.5, 18)	
Fan motor switch	1	16	18 (1.8, 13)	NOTE 1
OTHERS:				
Side stand pivot bolt	1	10	10 (1.0, 7)	
Side stand pivot lock nut	1	10	39 (4.0, 29)	

TOOLS

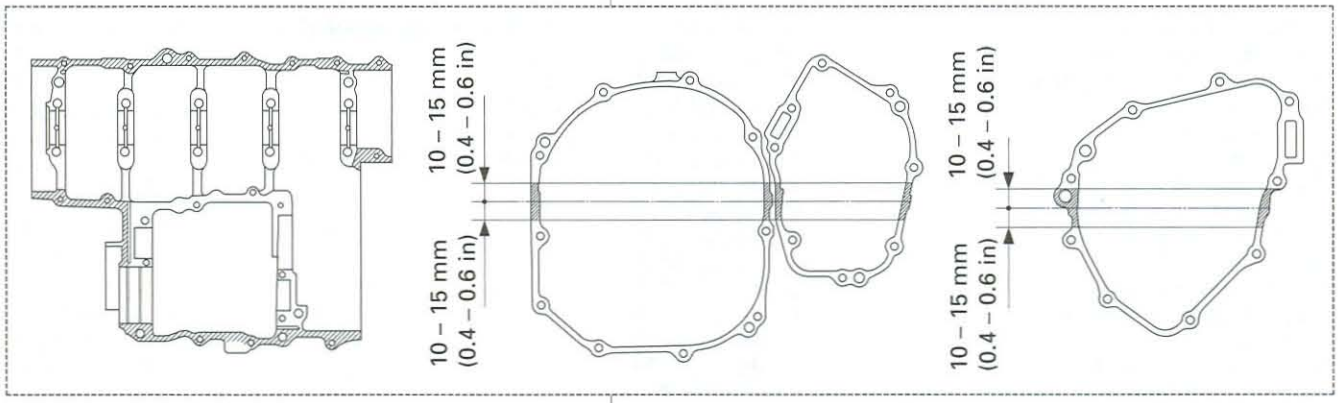
NOTES: 1. Equivalent commercially available.
2. Alternative tool.
3. Newly designed tool.
4. Not available in U.S.A

DESCRIPTION	TOOL NUMBER	REMARKS	REF. SEC.
Fuel pressure gauge	07406–0040003	NOTE 2: 07406–0040002	5
Oil pressure gauge set	07506–3000000	NOTE 1	4
Oil pressure gauge attachment	07510–MJ10100	NOTE 1	4
Clutch center holder	07724–0050002	NOTE 1	9
Flywheel holder	07725–0040000	NOTE 1	10
Rotor puller	07733–0020001	NOTE 2: 07933–3950000	10
Attachment, 32 X 35 mm	07746–0010100		9, 14
Attachment, 37 X 40 mm	07746–0010200		9, 14
Attachment, 42 X 47 mm	07746–0010300		13, 14
Attachment, 52 X 55 mm	07746–0010400		14
Attachment, 28 X 30 mm	07746–1870100		14
Attachment, 22 X 24 mm	07746–0010800		14
Inner driver C	07746–0030100		11
Attachment, 25 mm I.D.	07746–0030200		12
Outer driver, 37mm	07ZMD-MBW0200		14
Pilot, 17 mm	07746–0040400		9, 14
Pilot, 20 mm	07746–0040500		13, 14
Pilot, 35 mm	07746–0040800		9
Pilot, 28 mm	07746–0041100		14
Bearing remover shaft	07GGD–0010100		13, 14
Bearing remover head, 20 mm	07746–0050600		13, 14
Driver	07749–0010000		9, 13, 14
Valve spring compressor	07757–0010000		8
Valve seat cutter		NOTE 1	8
Seat cutter, 27.5 mm (45° IN/EX)	07780–0010200		
Flat cutter, 27 mm (32° EX)	07780–0013300		
Flat cutter, 30 mm (32° IN)	07780–0012200		
Interior cutter, 24 mm (60° IN/EX)	07780–0010600		
Cutter holder, 4.5 mm	07781–0010600		
Snap ring pliers	07914–SA50001		15
Steering stem socket	07916–3710101	NOTE 2: 07916–3710100	13
Ball race remover set	07953–MJ10000		13
– Attachment, 40 mm	07953–MJ10100		
– Driver shaft	07953–MJ10200		
Ball race remover, 40 x 245L	07953–4250002		
Ball race remover, 44.5 mm	07946–3710500		
Steering stem driver	07946–MB00000		13
Fork seal driver weight	07947–KA50100		13
Fork seal driver attachment	07946–KA40200		13
Valve spring compressor attachment	07959–KM30101		8
Oil filter wrench	07HAA–PJ70100		3
Peak voltage adaptor	07HGJ–0020100	NOTE 2	5, 17, 19
		NOTE 3: Peak voltage tester (U.S.A. only)	8
Tappet hole protector	07HMG–MR70002		
Drive chain tool set	07HMH–MR10103	NOTE 3: 07HMH-MR1010B or 07HMH-MR1010C (U.S.A. only)	3
Valve guide driver	07HMD–ML00101		8
Valve guide reamer, 4.508 mm	07HMH–ML00101		8
Compression gauge attachment	07RMJ–MY50100	NOTE 1	8
Inspection adaptor	07XMZ–MBW0101		20
ECM test harness	07YMZ–0010100	Two required	5
Valve guide driver	07743–0020000		8
Driver shaft B	07964-MB00200		12
Christie battery chrger	MC1012/2	U.S.A. only	17

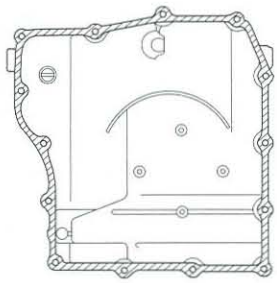
LUBRICATION & SEAL POINTS

ENGINE

LOCATION	MATERIAL	REMARKS
Crankcase mating surface	Liquid sealant (Three Bond 1207B or equivalent)	

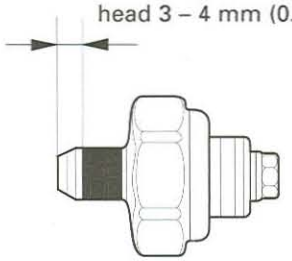


Oil pan mating surface



Oil pressure switch threads

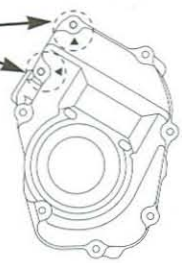
Do not apply sealant to the thread head 3 – 4 mm (0.1 – 0.2 in).



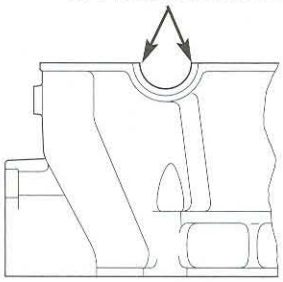
Ignition pulse generator cover bolt threads

Apply sealant to the thread head 6.5 ± 1 mm

Marked "△"



ENGINE (Cont'd)

LOCATION	MATERIAL	REMARKS
Ignition pulse generator grommet ECT (engine coolant temperature sensor) threads Cam pulse generator rotor bolt threads Lower crankcase sealing bolt threads Cylinder head sealing bolt threads AC generator bolt threads Cylinder head semi-circular cut-out APPLIED POSITION 	Sealant	Crankcase mating surface Coating width: 6.5 ± 1 mm
Main journal bearing surface Piston pin sliding surface Connecting rod bearing surface Connecting rod small end inner surface Crankshaft thrust surface Camshaft lobes/journals and thrust surface Valve stem (valve guide sliding surface) Valve lifter outer sliding surface Clutch outer/primary driven gear sliding surface Clutch outer guide sliding surface M3/4, C5, C6 shifter gear (shift fork grooves) Starter reduction gear shaft outer surface	Molybdenum disulfide oil (a mixture of 1/2 engine oil and 1/2 molybdenum disulfide grease	
Piston ring sliding area Oil strainer packing Clutch disc surface Starter one-way clutch sliding surface Connecting rod nut threads Flywheel bolt threads and seating surface Main journal 8 mm bolt threads and seating surface (after removing anti-rust oil additive) Clutch center lock nut threads Oil filter cartridge threads and O-ring Camshaft holder bolt threads and seating surface Cam chain tensioner, tensioner collar seating surface Oil cooler center bolt threads Each gear tooth and rotating surface Each bearing Each O-ring Other rotating area and sliding surface	Engine oil	

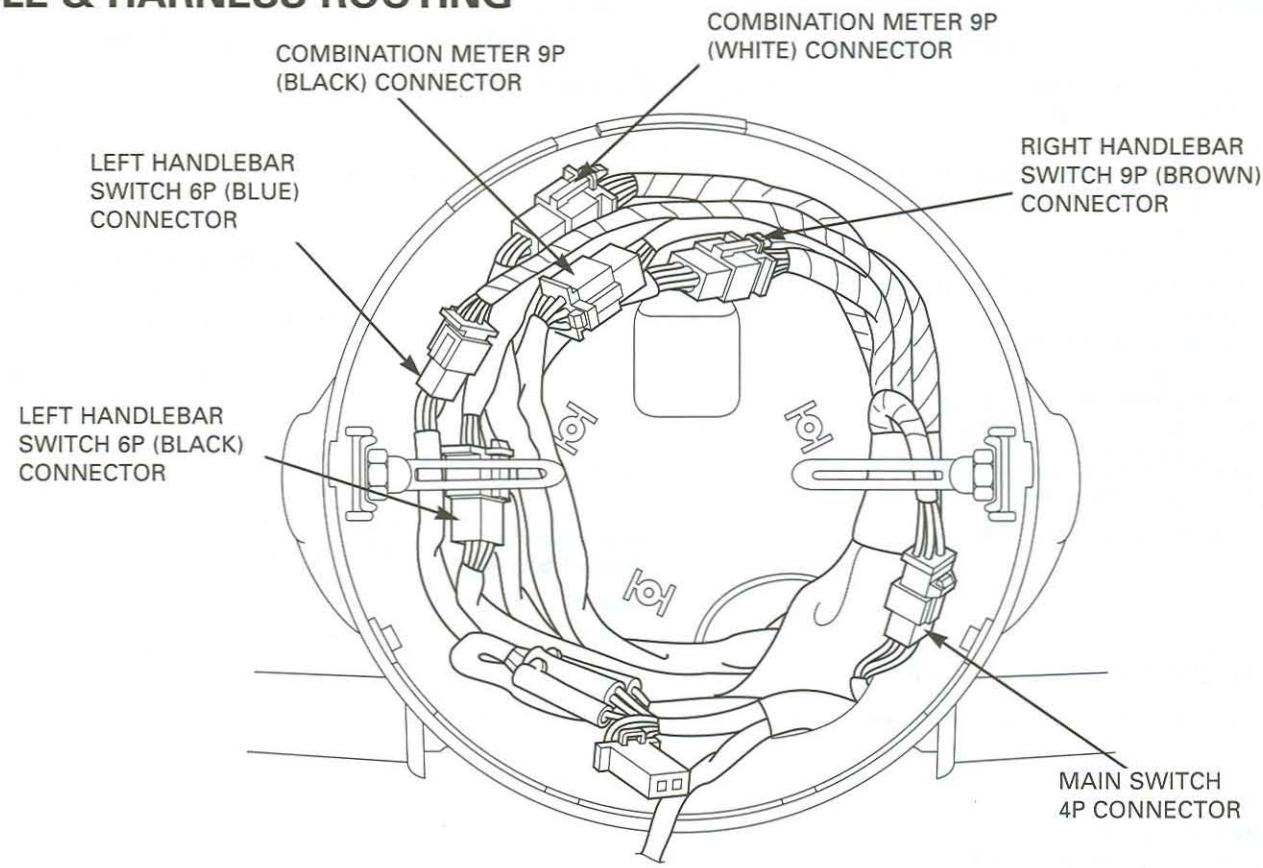
ENGINE (Cont'd)

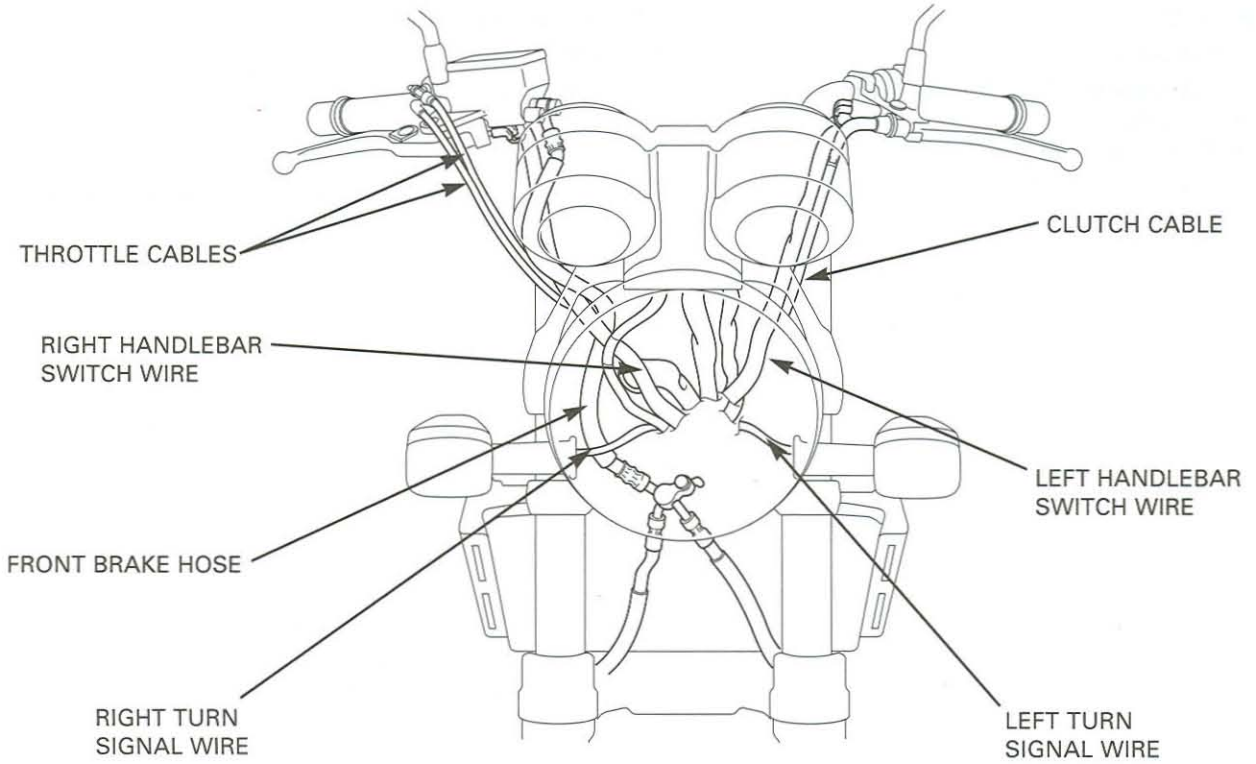
LOCATION	MATERIAL	REMARKS
Timing hole cap threads Each oil seal lip	Multi-purpose grease	
Lower crankcase sealing bolt threads Cylinder head cover breather plate bolt threads Cam pulse generator rotor bolt threads Starter one-way clutch outer bolt threads Oil pump driven sprocket bolt threads Shift drum bearing set plate bolt threads Mainshaft bearing set plate bolt threads Cam sprocket bolt threads Shift drum center bolt threads Spindle plate tightening bolt threads Oil filter boss threads	Locking agent	Coating width: 6.5 ± 1 mm

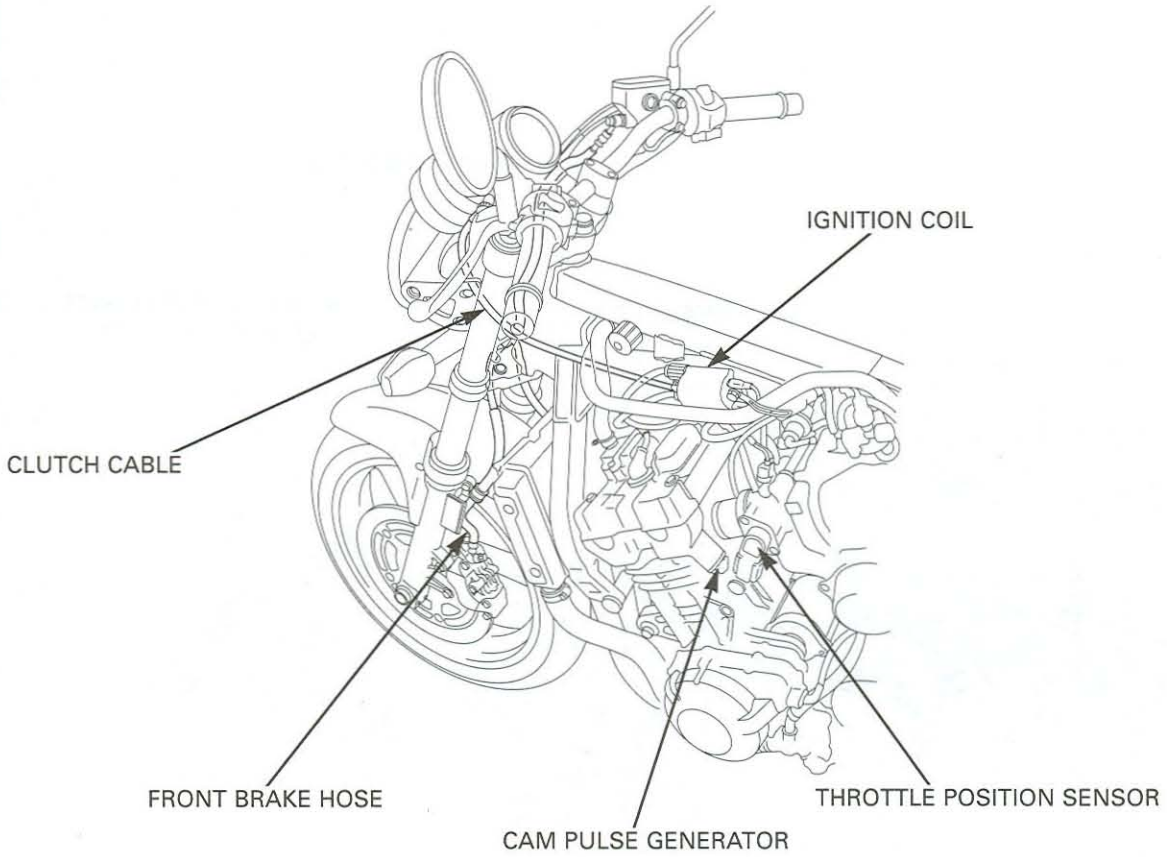
FRAME

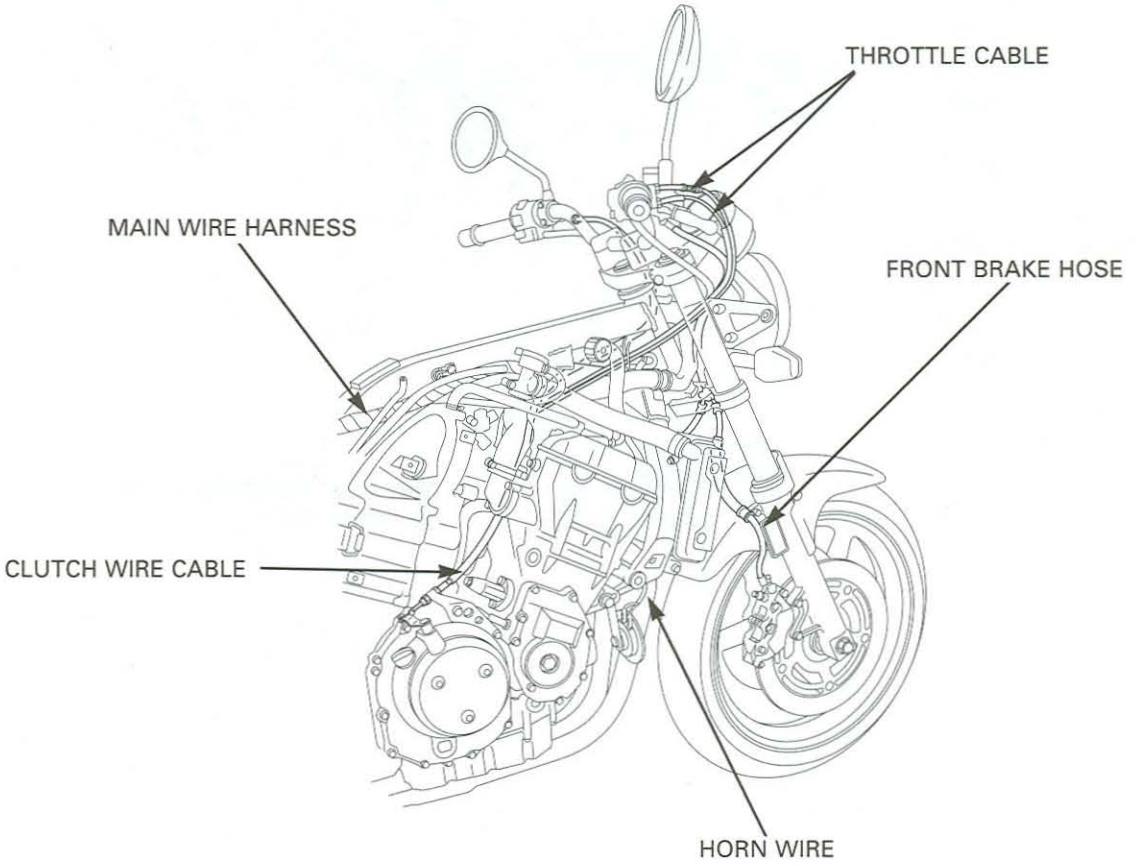
LOCATION	MATERIAL	REMARKS
Seat catch hook sliding area Front wheel dust seal lips Rear wheel dust seal lips Clutch lever pivot bolt sliding area Rear brake pedal pivot sliding area Gearshift pedal pivot Side stand pivot Steering head bearing sliding surface Steering head dust seal lips Swingarm pivot bearings Swingarm pivot dust seal lips Shock absorber needle bearings Shock absorber dust seal lips	Multi-purpose grease	
Throttle cable A, B outer inside Clutch cable outer inside	Cable lubricant	
Handlebar grip rubber inside	Honda bond A, Honda Hand Grip Cement (U.S.A. only or equivalent)	
Steering bearing adjustment nut threads	Engine oil	
Front brake lever-to-master piston contacting area Front brake lever pivot Rear master brake master piston-to-push rod contacting area Brake caliper dust seals Rear brake caliper boot inside Rear brake caliper pin boot inside	Silicone grease	
Brake master piston and cups Brake caliper piston and piston seals	DOT 4 brake fluid	
Fork cap O-ring Fork dust seal and oil seal lips	Pro Honda Suspension Fluid SS-8	
Rear brake reservoir hose joint screw threads Front brake caliper assembly bolt threads Rear brake caliper pin bolt threads Front fork socket bolt threads	Locking agent	

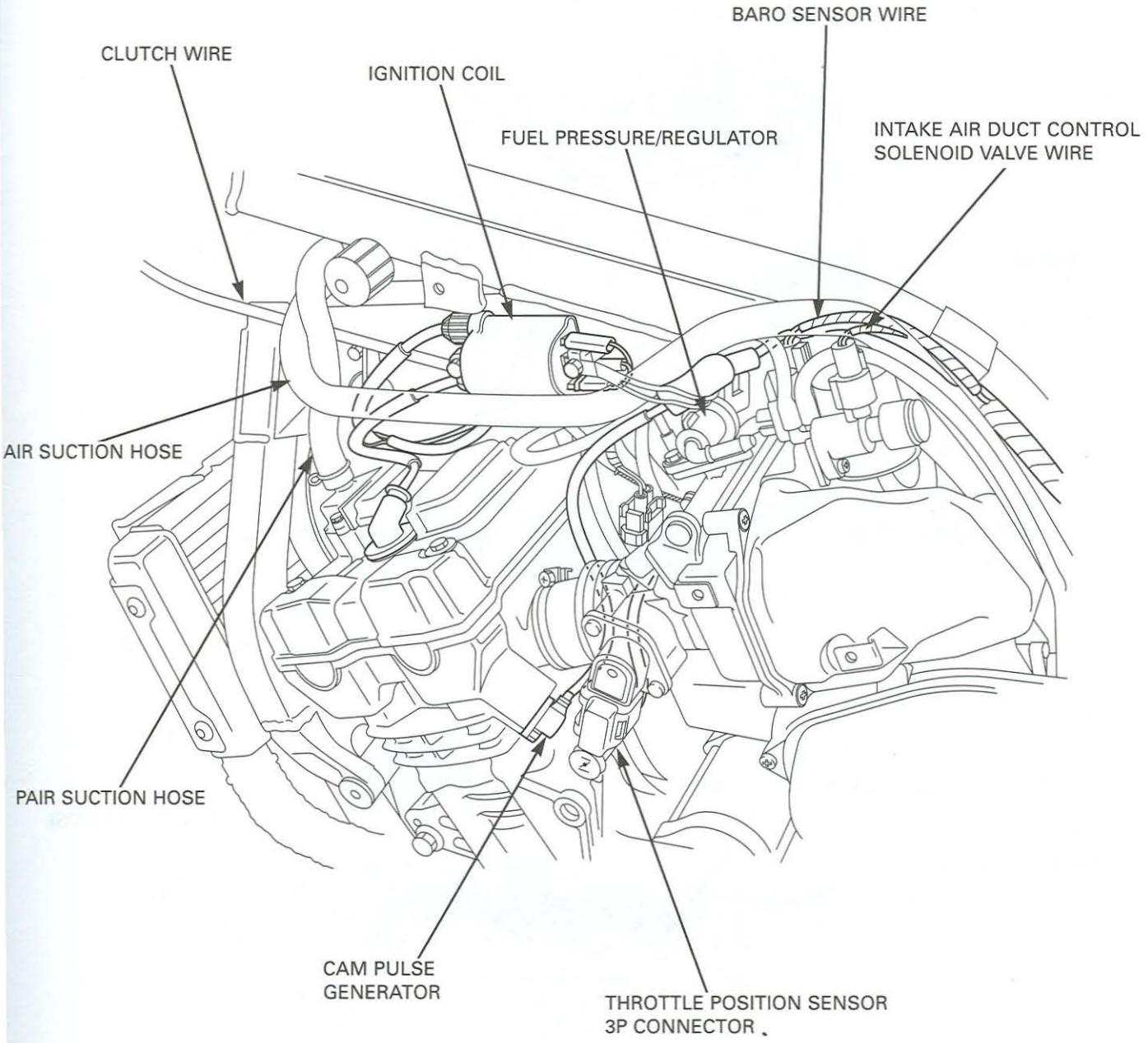
CABLE & HARNESS ROUTING

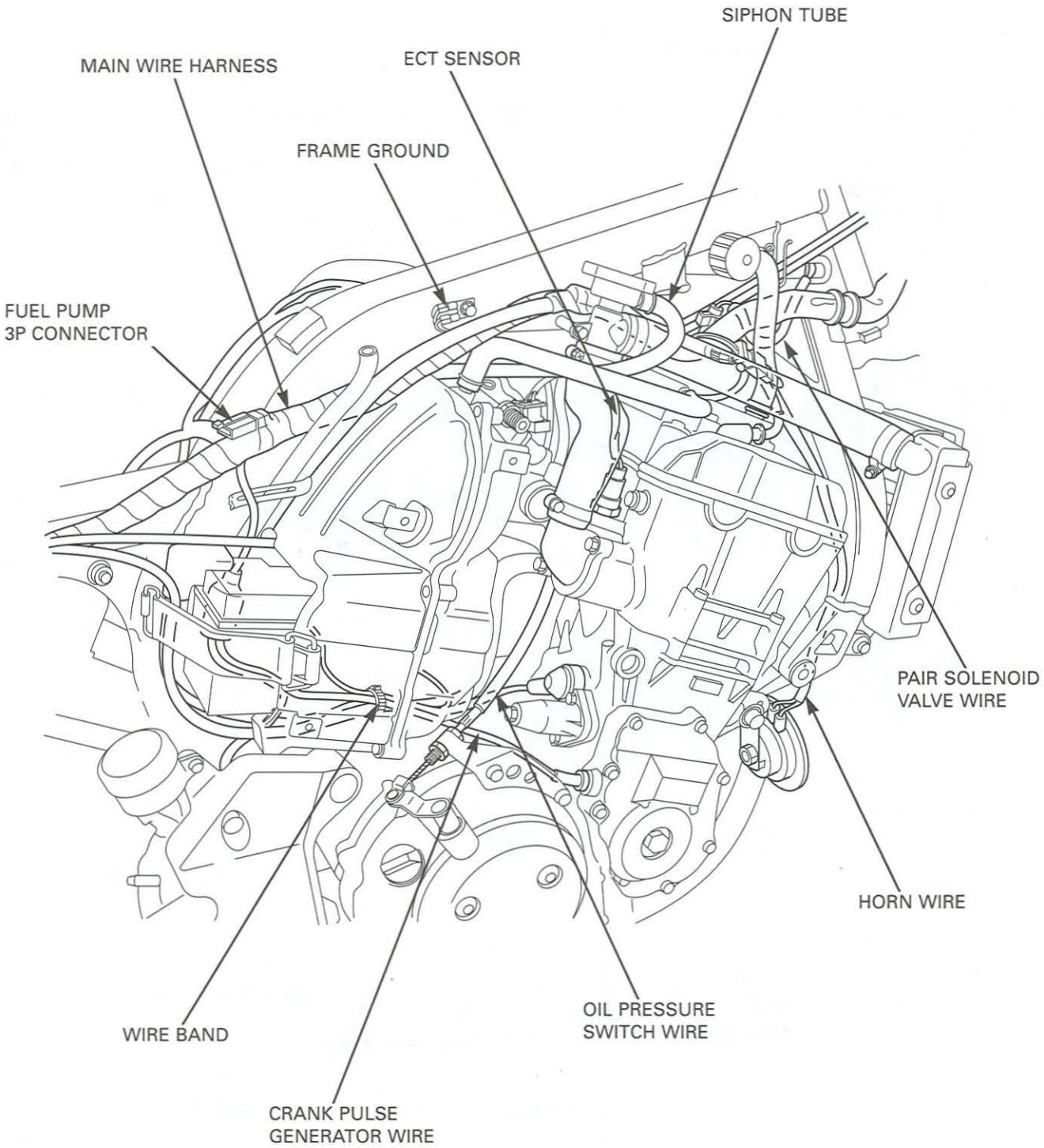


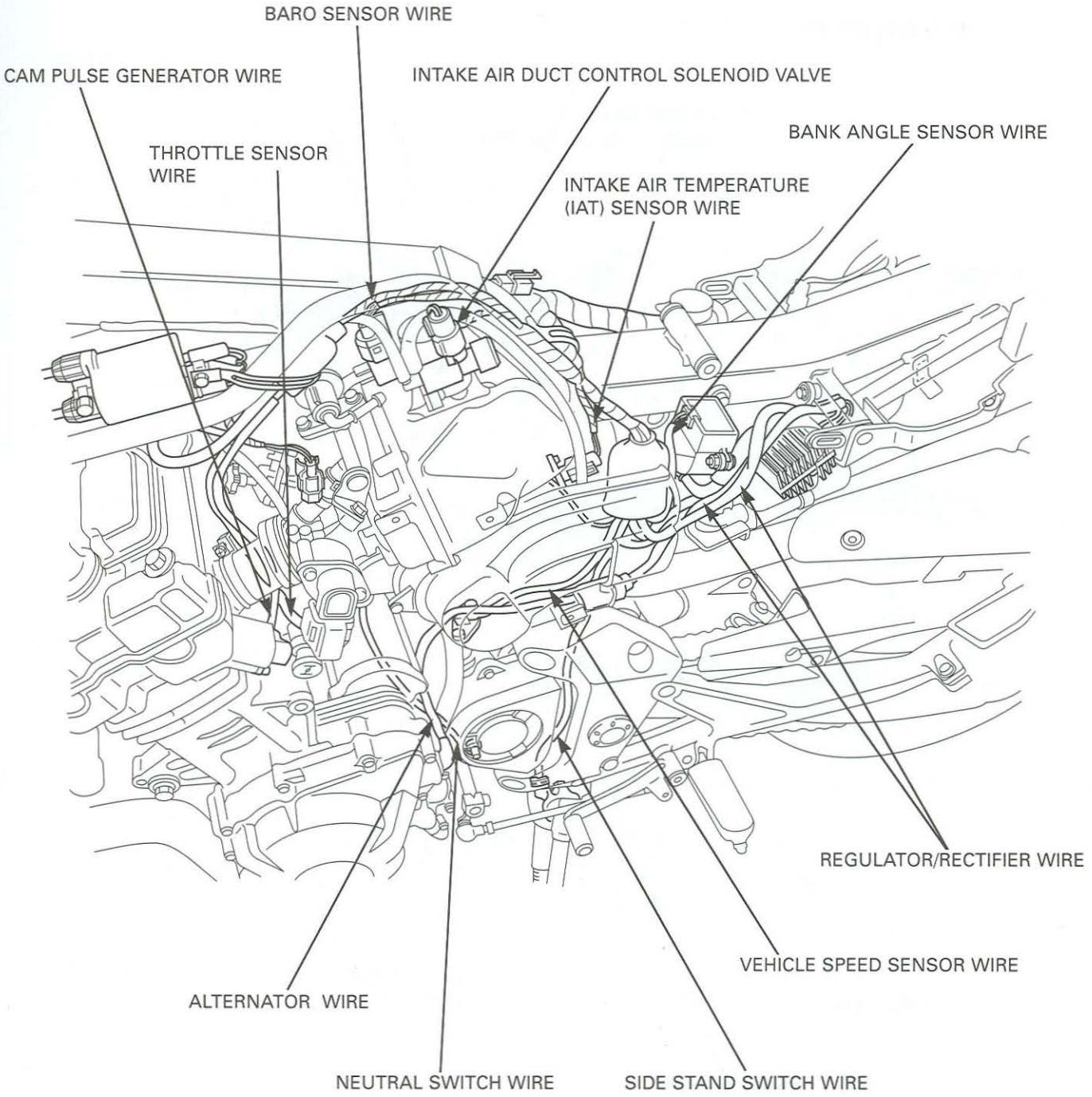


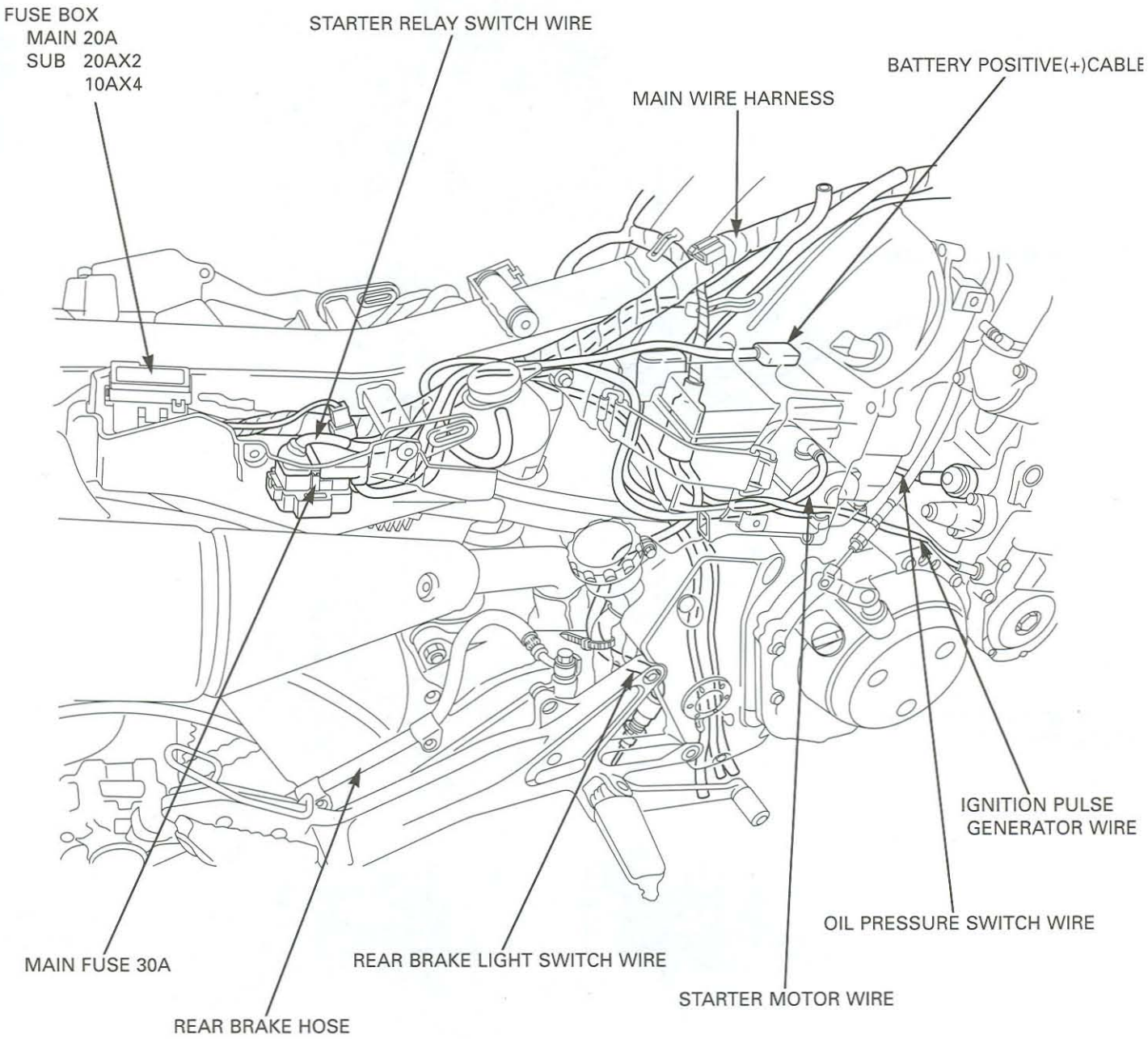

IGNITION COIL
CLUTCH CABLE
FRONT BRAKE HOSE
CAM PULSE GENERATOR
THROTTLE POSITION SENSOR

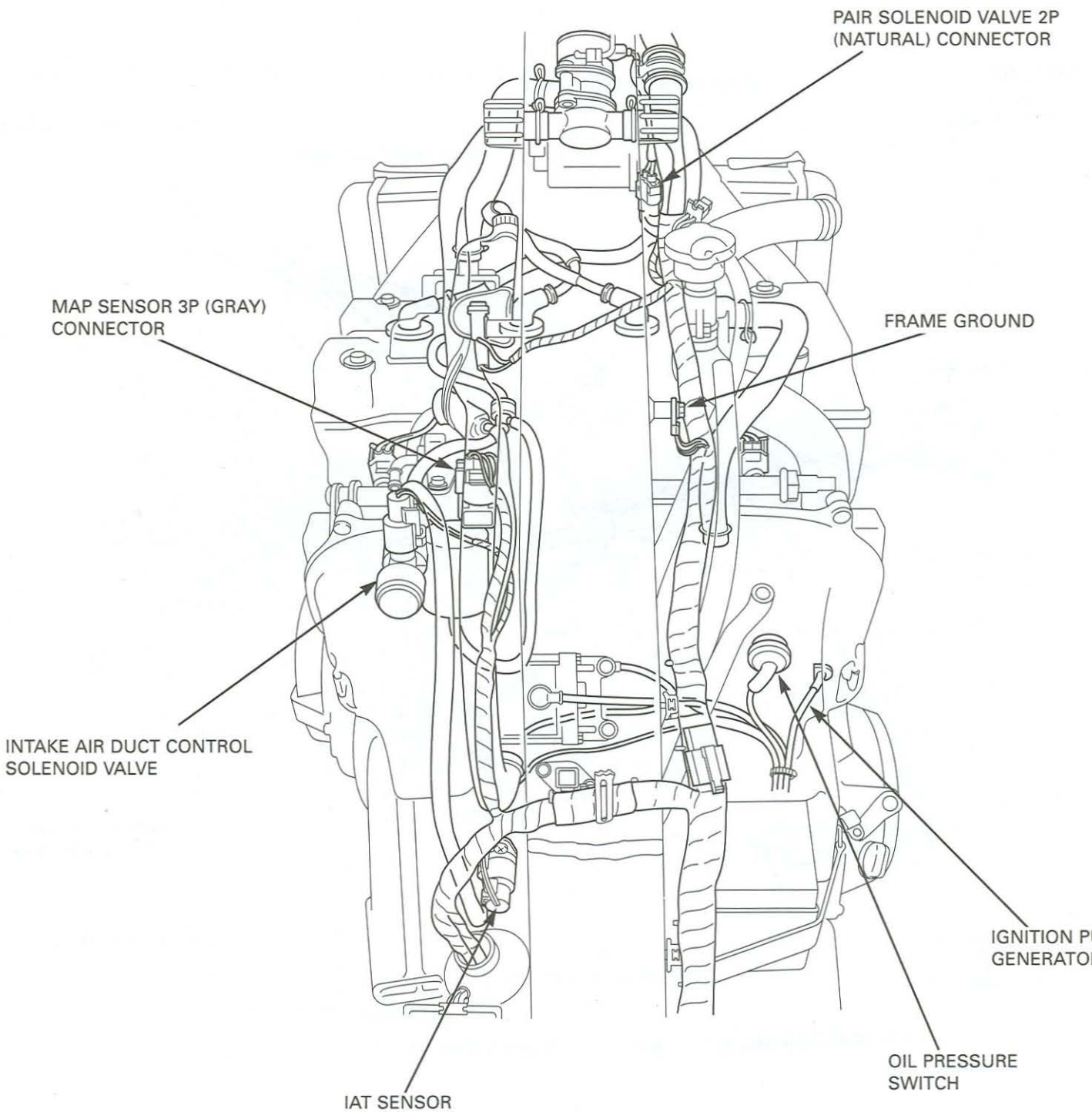

THROTTLE CABLE
MAIN WIRE HARNESS
FRONT BRAKE HOSE
CLUTCH WIRE CABLE
HORN WIRE

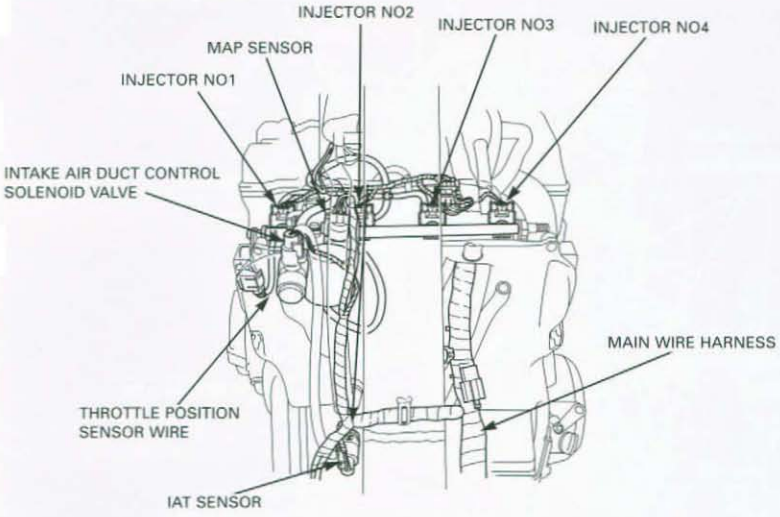

BARO SENSOR WIRE
CLUTCH WIRE
IGNITION COIL
FUEL PRESSURE/REGULATOR
INTAKE AIR DUCT CONTROL SOLENOID VALVE WIRE
AIR SUCTION HOSE
PAIR SUCTION HOSE
CAM PULSE GENERATOR
THROTTLE POSITION SENSOR 3P CONNECTOR

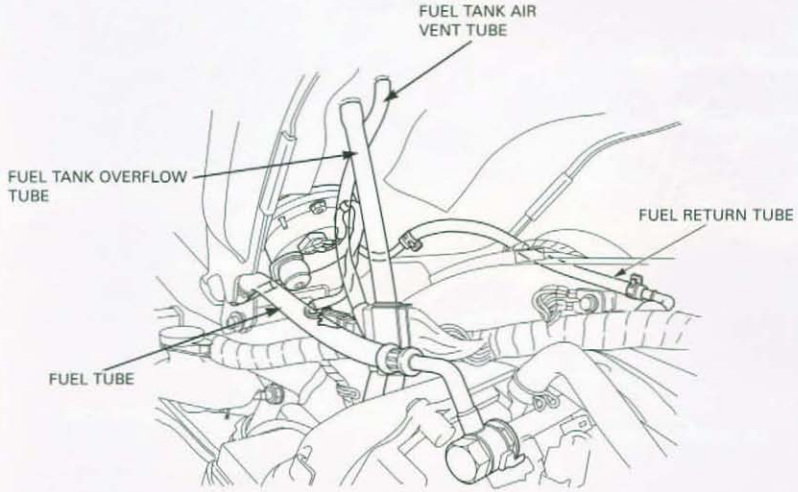

SIPHON TUBE
MAIN WIRE HARNESS
ECT SENSOR
FRAME GROUND
FUEL PUMP
3P CONNECTOR
PAIR SOLENOID
VALVE WIRE
HORN WIRE
OIL PRESSURE
SWITCH WIRE
WIRE BAND
CRANK PULSE
GENERATOR WIRE

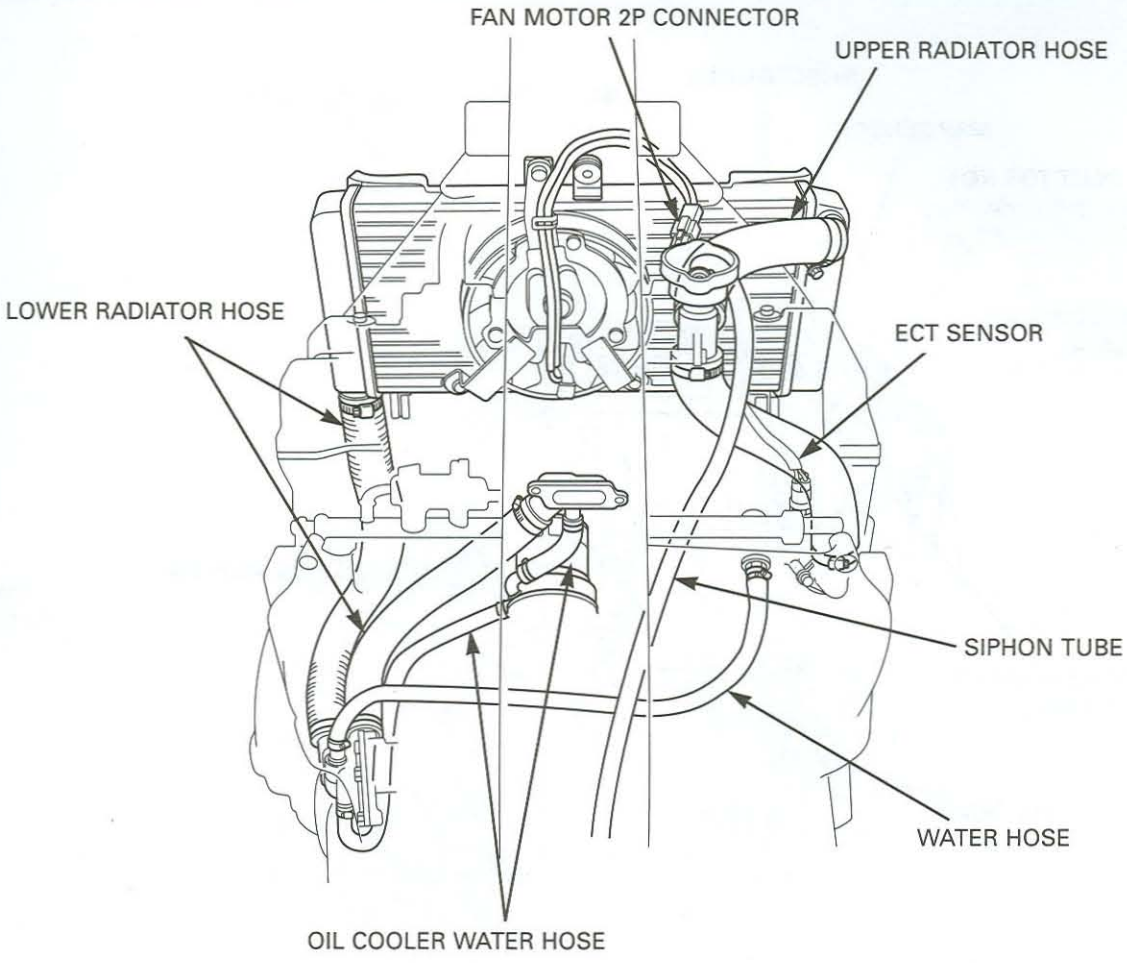

BARO SENSOR WIRE
CAM PULSE GENERATOR WIRE
INTAKE AIR DUCT CONTROL SOLENOID VALVE
BANK ANGLE SENSOR WIRE
THROTTLE SENSOR WIRE
INTAKE AIR TEMPERATURE (IAT) SENSOR WIRE
REGULATOR/RECTIFIER WIRE
VEHICLE SPEED SENSOR WIRE
ALTERNATOR WIRE
NEUTRAL SWITCH WIRE
SIDE STAND SWITCH WIRE

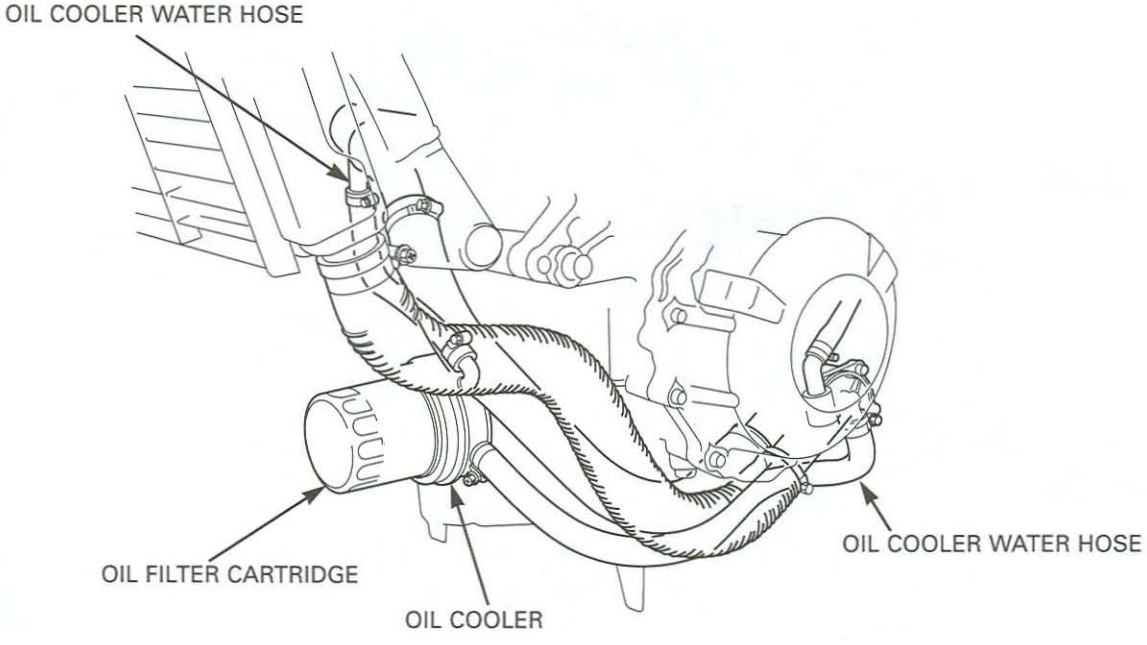

FUSE BOX
MAIN 20A
SUB 20AX2
10AX4
STARTER RELAY SWITCH WIRE
BATTERY POSITIVE(+)CABLE
MAIN WIRE HARNESS
IGNITION PULSE
GENERATOR WIRE
OIL PRESSURE SWITCH WIRE
MAIN FUSE 30A
REAR BRAKE LIGHT SWITCH WIRE
STARTER MOTOR WIRE
REAR BRAKE HOSE

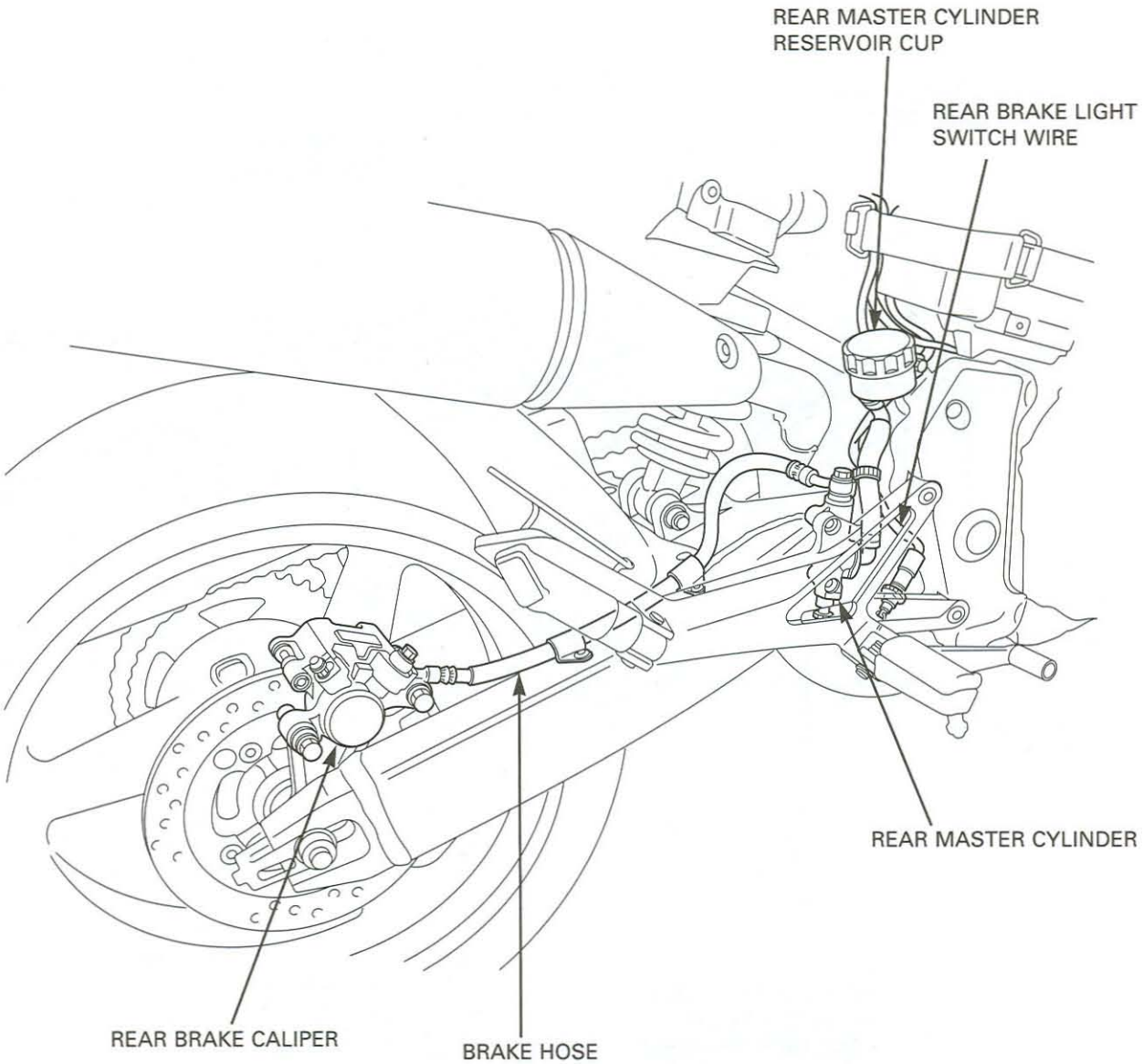

PAIR SOLENOID VALVE 2P (NATURAL) CONNECTOR
MAP SENSOR 3P (GRAY) CONNECTOR
FRAME GROUND
INTAKE AIR DUCT CONTROL SOLENOID VALVE
IGNITION PU
GENERATOF
OIL PRESSURE SWITCH
IAT SENSOR

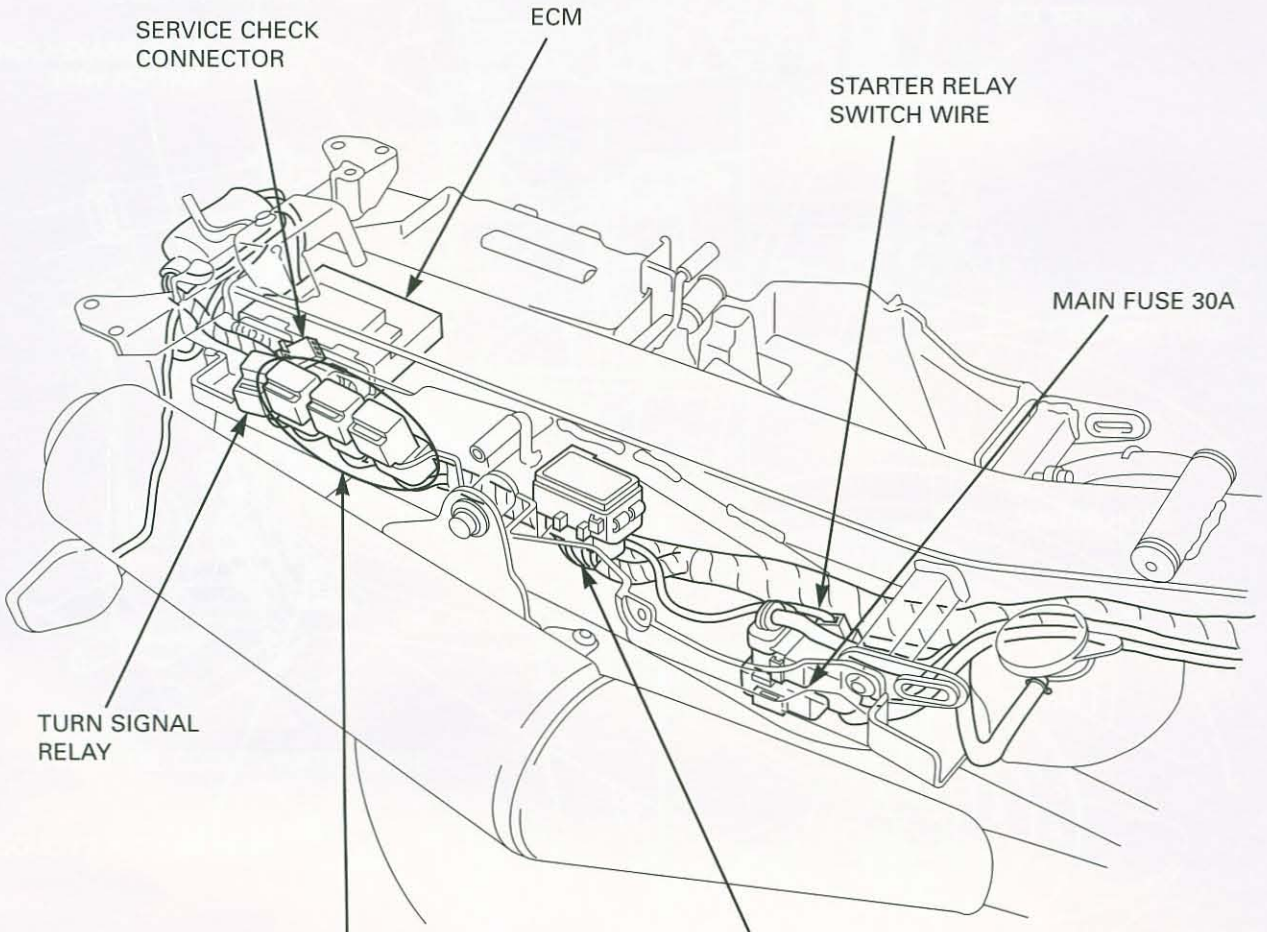

INJECTOR NO2
INJECTOR NO3
INJECTOR NO4
MAP SENSOR
INJECTOR NO1
INTAKE AIR DUCT CONTROL SOLENOID VALVE
MAIN WIRE HARNESS
THROTTLE POSITION SENSOR WIRE
IAT SENSOR


FUEL TANK AIR VENT TUBE
FUEL TANK OVERFLOW TUBE
FUEL RETURN TUBE
FUEL TUBE

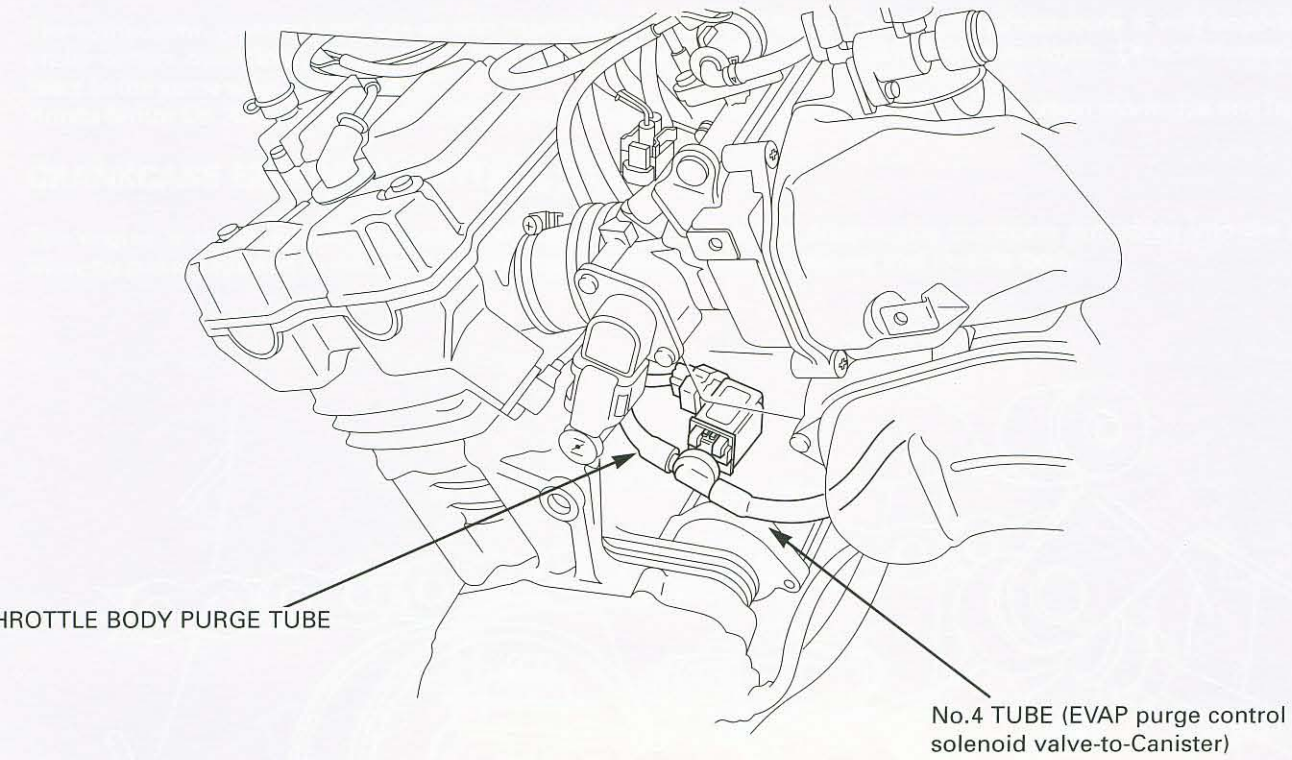

FAN MOTOR 2P CONNECTOR
UPPER RADIATOR HOSE
LOWER RADIATOR HOSE
ECT SENSOR
SIPHON TUBE
WATER HOSE
OIL COOLER WATER HOSE

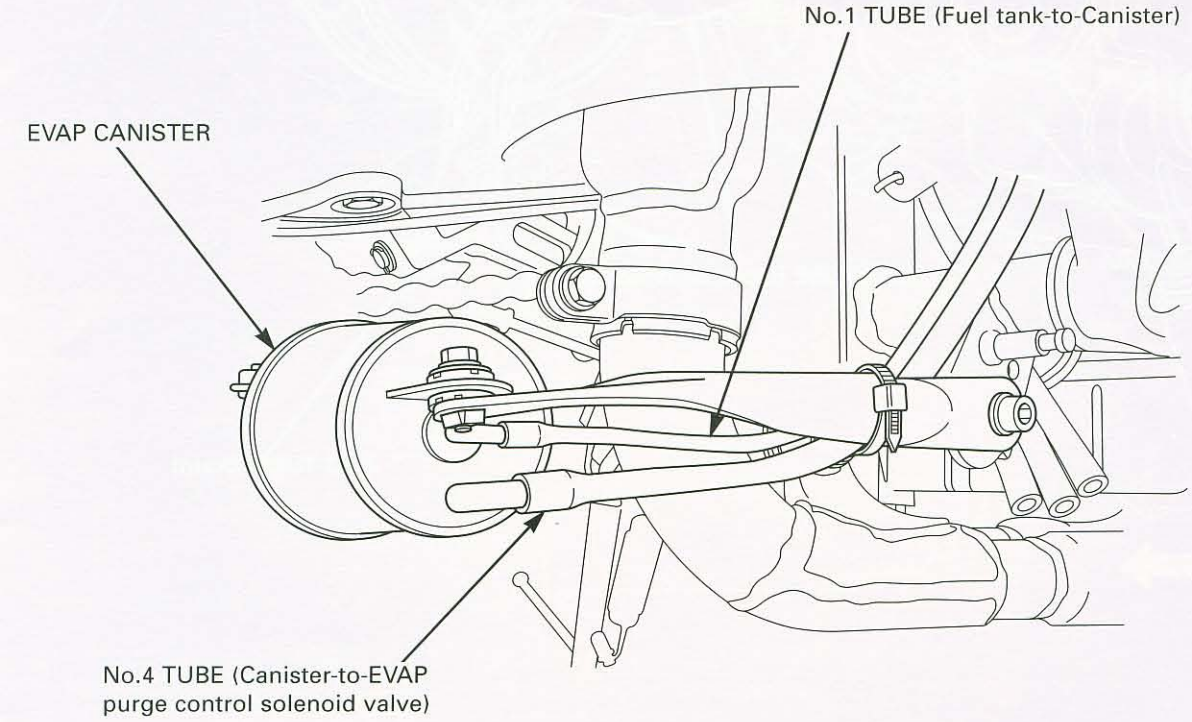

OIL COOLER WATER HOSE
OIL FILTER CARTRIDGE
OIL COOLER
OIL COOLER WATER HOSE


REAR MASTER CYLINDER
RESERVOIR CUP
REAR BRAKE LIGHT
SWITCH WIRE
REAR MASTER CYLINDER
REAR BRAKE CALIPER
BRAKE HOSE

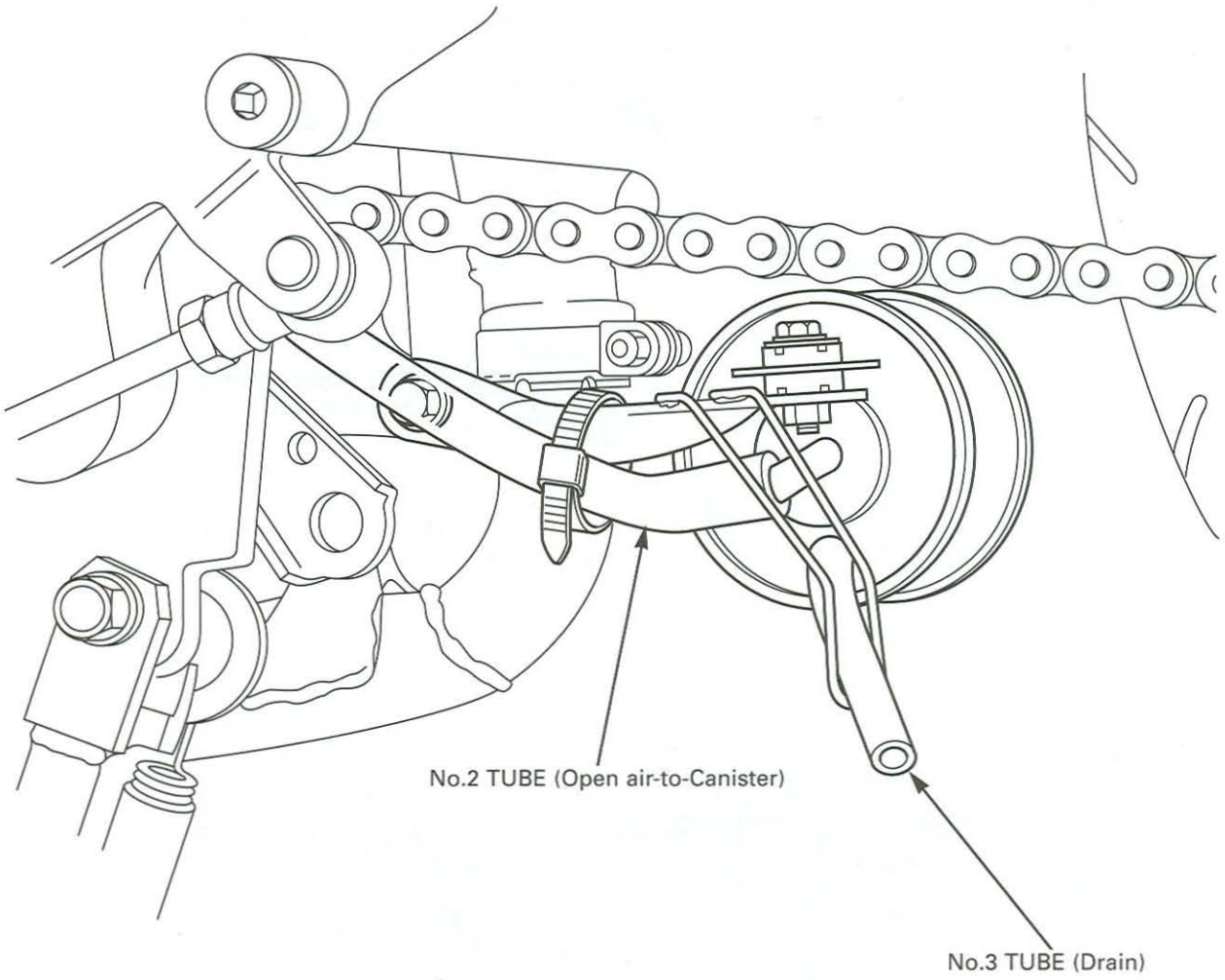

SERVICE CHECK CONNECTOR
ECM
STARTER RELAY SWITCH WIRE
MAIN FUSE 30A
TURN SIGNAL RELAY
RELAYS
• FAN CONTROL RELAY
• FUEL CUT RELAY
• ENGINE STOP RELAY
FUSE BOX
• MAIN FUSE 20A
• SUB FUSE 20A X 2
10A X 4

California type only





California type only



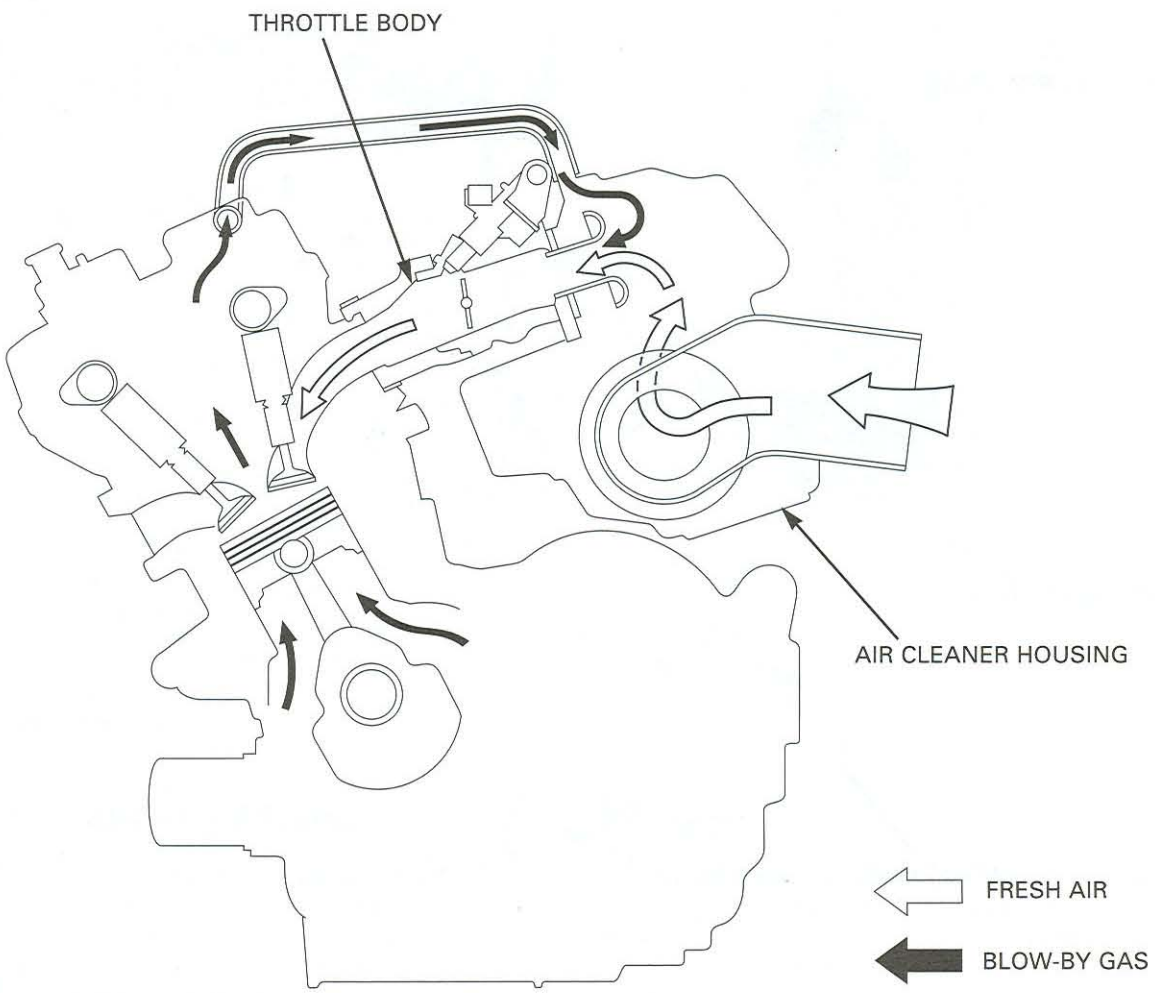
EMISSION CONTROL SYSTEMS

SOURCE OF EMISSIONS

The combustion process produces carbon monoxide and hydrocarbons. Control of hydrocarbons is very important because, under certain conditions, they react to form photochemical smog when subjected to sunlight. Carbon monoxide does not react in the same way, but it is toxic.
Honda Motor Co., Ltd. utilizes lean injection settings as well as other systems, to reduce carbon monoxide and hydrocarbons.

CRANKCASE EMISSION CONTROL SYSTEM

The engine is equipped with a closed crankcase system to prevent discharging crankcase emissions into the atmosphere. Blow-by gas is returned to the combustion chamber through the air cleaner and throttle body.



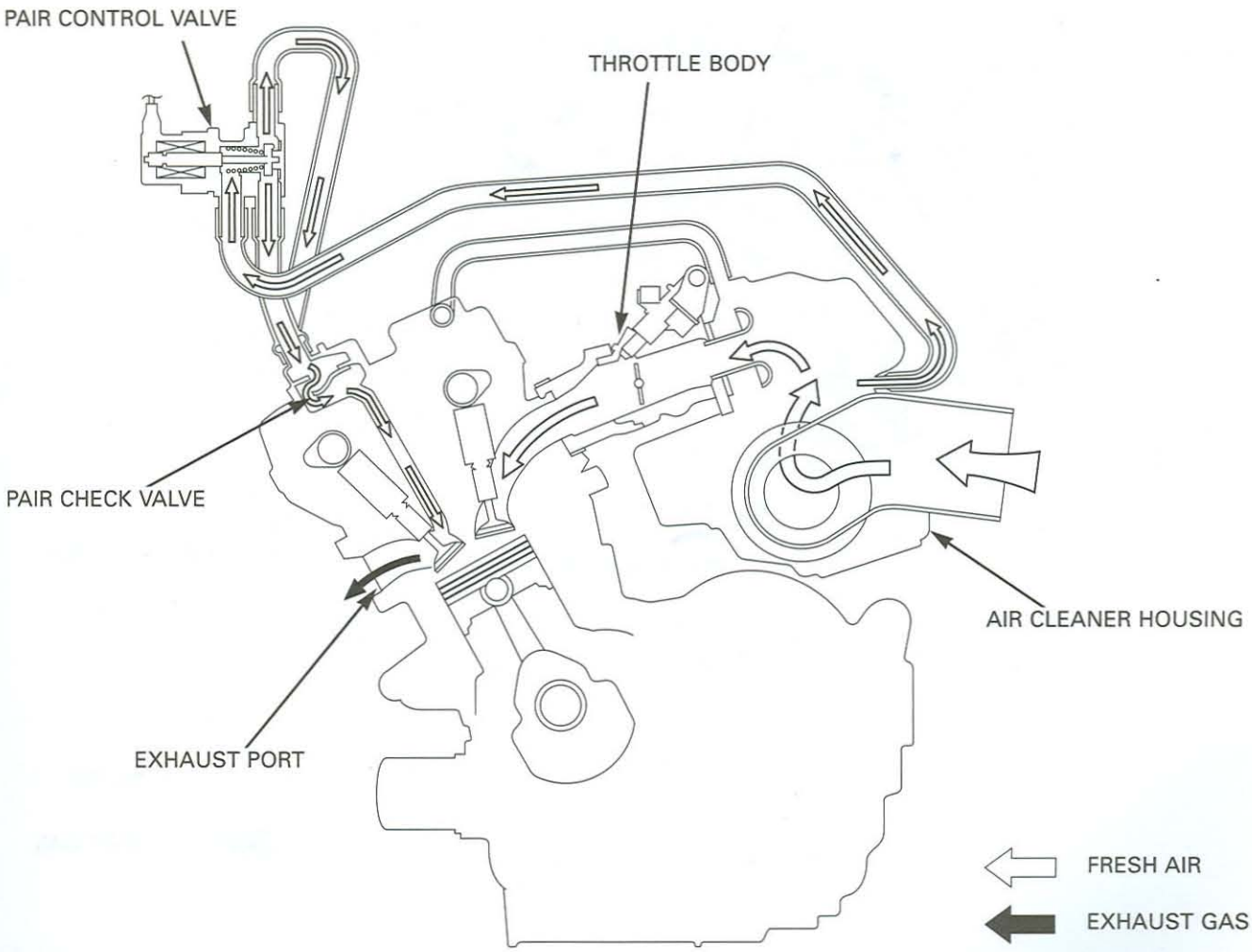
EXHAUST EMISSION CONTROL SYSTEM (SECONDARY AIR SUPPLY SYSTEM)

The exhaust emission control system is composed of a lean fuel injection setting, and no adjustments should be made except idle speed adjustment with the throttle stop screw. The exhaust emission control system is separate from the crankcase emission control system.

The exhaust emission control system consists of a secondary air supply system that introduces filtered air into the exhaust gases in the exhaust port. Fresh air is drawn into the exhaust port by the function of the PAIR (Pulse Secondary Air Injection) control valve.
This charge of fresh air promotes burning of the unburned exhaust gases and changes a considerable amount of hydrocarbons and carbon monoxide into relatively harmless carbon dioxide and water vapor.

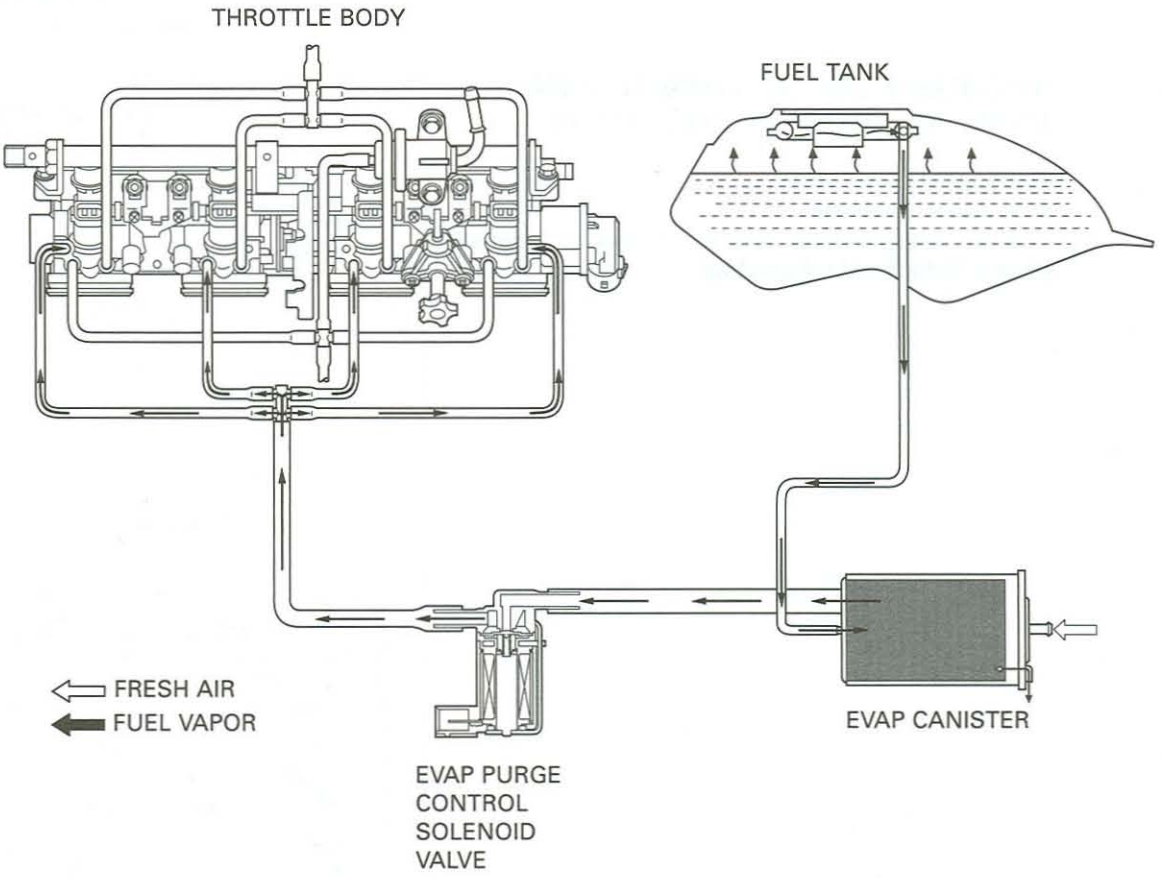
The reed valve prevents reverse air flow through the system. The PAIR control valve is operated by the solenoid valve. The solenoid valve is controlled by the PGM-FI unit, and the fresh air passage is opened/closed according to the running condition (ECT/IAT/TP/MAP sensor and engine revolution).

No adjustments to the secondary air supply system should be made, although periodic inspection of the components is recommended.



EVAPORATIVE EMISSION CONTROL SYSTEM (CALIFORNIA TYPE ONLY)

This model complies with California Air Resources Board evaporative emission requirements.
Fuel vapor from the fuel tank is routed into the evaporative emission (EVAP) canister where it is absorbed and stored while the engine is stopped. When the engine is running and the evaporative emission (EVAP) purge control solenoid valve is open, fuel vapor in the EVAP canister is drawn into the engine through the throttle body.



NOISE EMISSION CONTROL SYSTEM

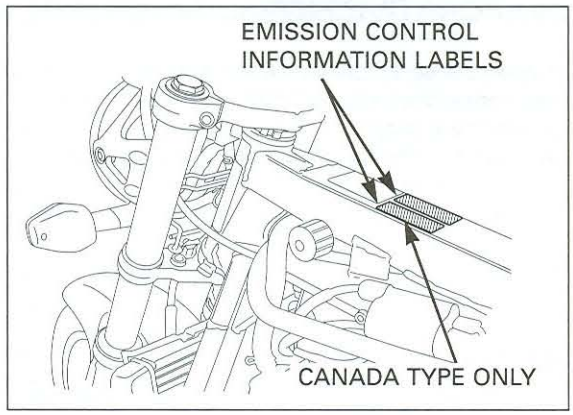
TAMPERING WITH THE NOISE CONTROL SYSTEM IS PROHIBITED: Local law prohibits the following acts or the causing thereof: (1) The removal or rendering inoperative by any person, other than for purposes of maintenance, repair or replacement, of any device or element of design incorporated into any new vehicle for the purpose of noise control prior to its sale or delivery to the ultimate purchaser or while it is in use; (2) the use of the vehicle after such device or element of design has been removed or rendered inoperative by any person.

AMONG THOSE ACTS PRESUMED TO CONSTITUTE TAMPERING ARE THE ACTS LISTED BELOW:

1. Removal of, or puncturing of the muffler, baffles, header pipes or any other component which conducts exhaust gases.
2. Removal of, or puncturing of any part of the intake system.
3. Lack of proper maintenance.
4. Replacing any moving parts of the vehicle, or parts of the exhaust or intake system, with parts other then those specified by the manufacturer.

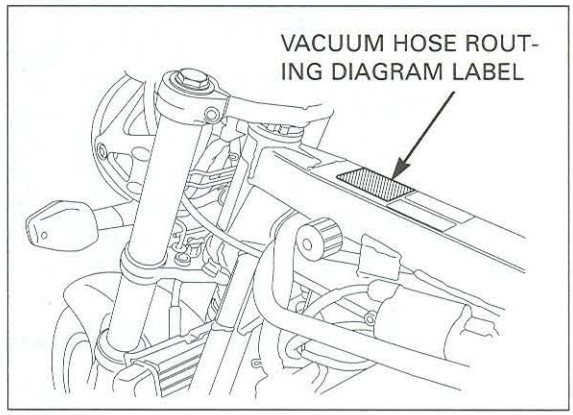
EMISSION CONTROL INFORMATION LABELS (U.S.A. ONLY)

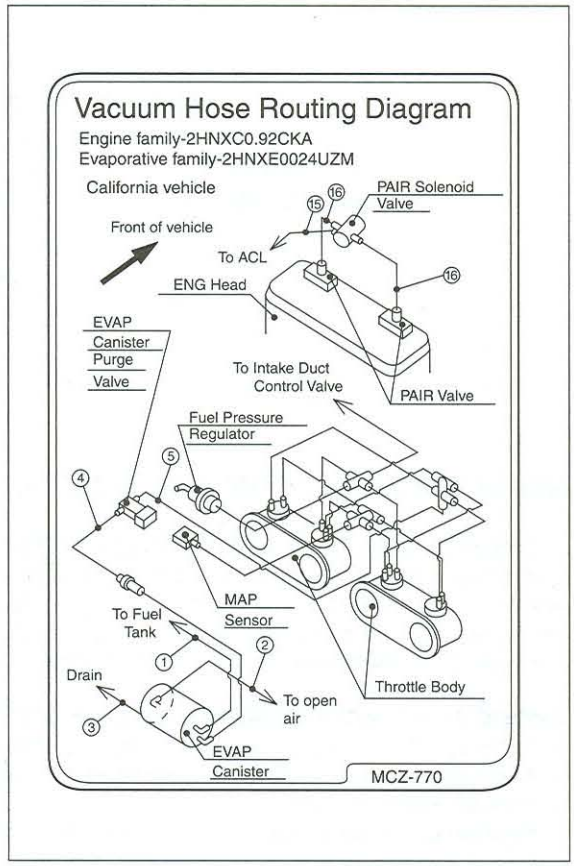
An Emission Control Information Label is located on the main frame as shown. It gives base tune-up specifications.
The fuel tank must be lifted up to read it.
Refer to page 3-15 for fuel tank opening.



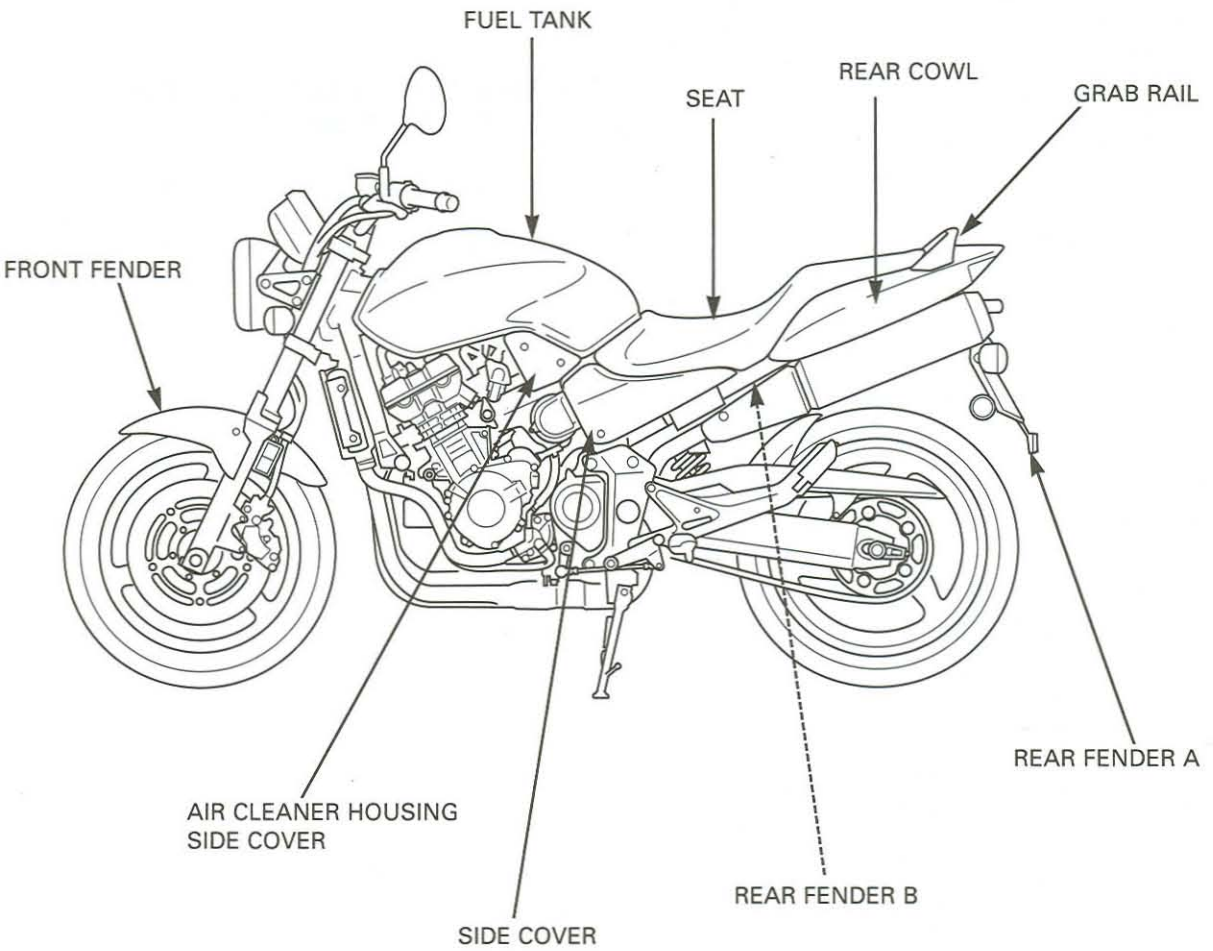
VACUUM HOSE ROUTING DIAGRAM LABEL (CALIFORNIA TYPE ONLY)

The Vacuum Hose Routing Diagram Label is on the main frame as shown.
The fuel tank must be lifted up to read it. Refer to page 3-15 for fuel tank opening.





BODY PANEL LOCATIONS



2. FRAME/BODY PANELS/EXHAUST SYSTEM

SERVICE INFORMATION

GENERAL

- Work in a well ventilated area. Smoking or allowing flames or sparks in the work area or where gasoline is stored can cause a fire or explosion.
- This section covers removal and installation of the body panels and exhaust system.
- Serious burns may result if the exhaust system is not allowed to cool before components are removed or serviced.
- Always replace the exhaust pipe gaskets after removing the exhaust pipe from the engine.

TORQUE VALUES

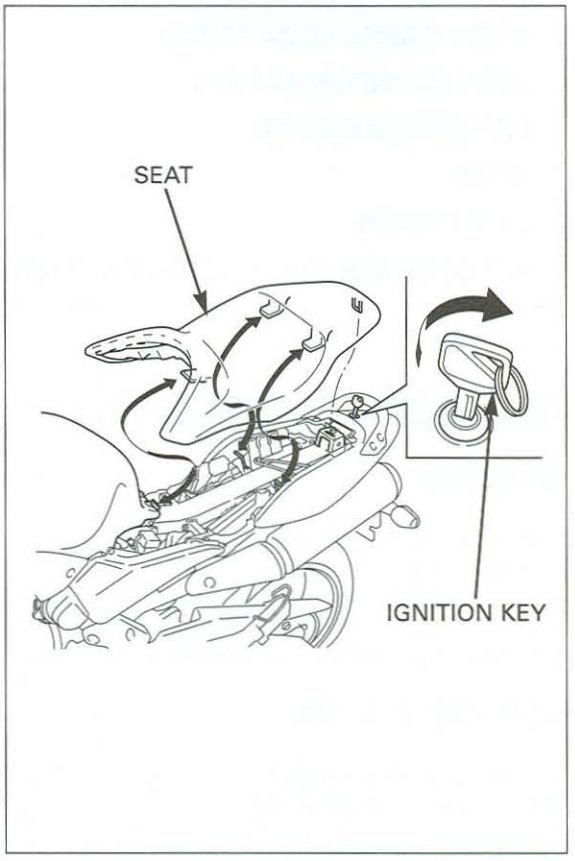
Exhaust pipe joint flange nut	20 N•m (2.0 kgf•m, 14 lbf•ft)
Exhaust pipe mounting bolt	27 N•m (2.8 kgf•m, 20 lbf•ft)
Exhaust pipe band bolt	27 N•m (2.8 kgf•m, 20 lbf•ft)
Muffler band flange bolt	27 N•m (2.8 kgf•m, 20 lbf•ft)
Muffler mounting bolt	27 N•m (2.8 kgf•m, 20 lbf•ft)

TROUBLESHOOTING

Excessive exhaust noise
- Broken exhaust system
- Exhaust gas leak

Poor performance
- Deformed exhaust system
- Exhaust gas leak
- Clogged muffler

SEAT



REMOVAL

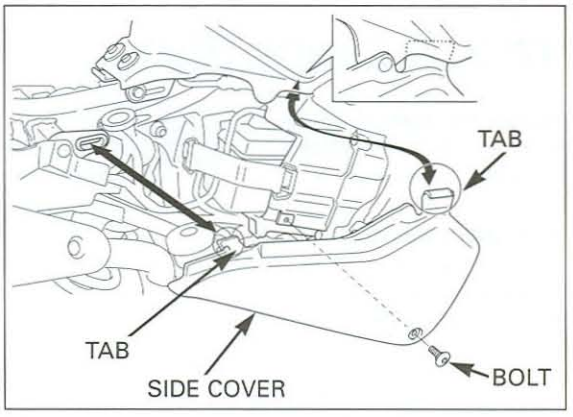
Unhook the seat with the ignition key.

Pull the seat back and remove it.

INSTALLATION

Align the seat hooks with the frame hooks and push the seat forward.
Push the seat down until it locks.

SIDE COVER



REMOVAL

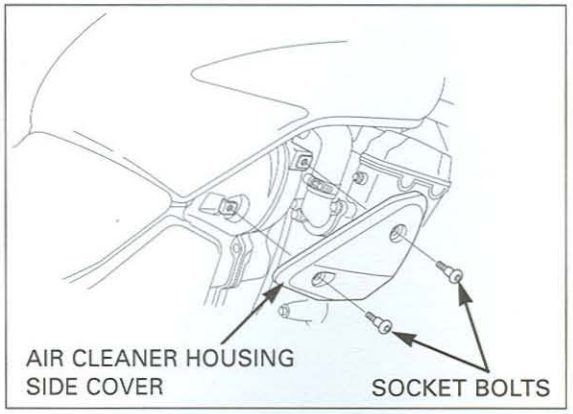
Remove the seat (page 2-2).

Remove the side cover bolt.
Remove the front tab from the fuel tank and remove the rear tab from the grommet of the frame.

Remove the side cover.

Installation is in the reverse order of removal.

AIR CLEANER HOUSING SIDE COVER



REMOVAL/INSTALLATION

Remove the socket bolts and air cleaner housing side cover.

Installation is in the reverse order of removal.

REAR COWL

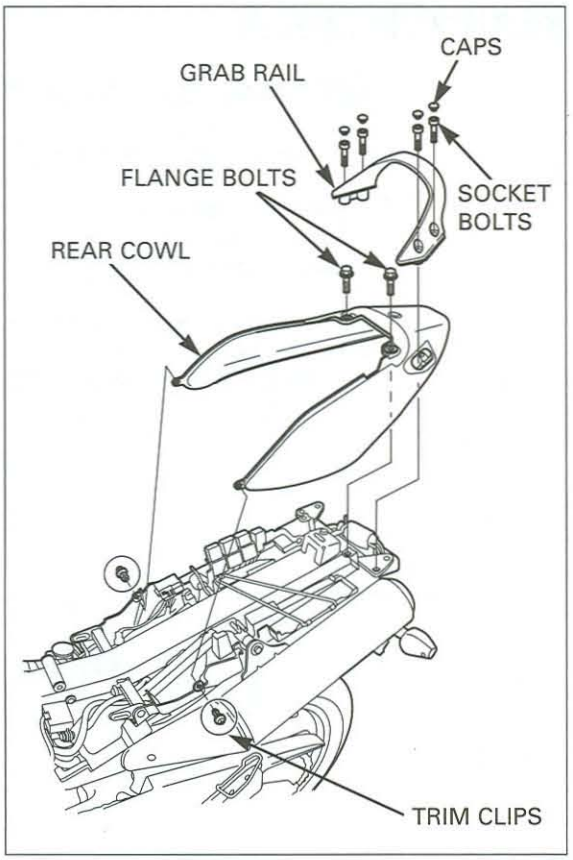
REMOVAL/INSTALLATION

Remove the seat and side cover (page 2-2).

Remove the tail/brake light 3P connector.
Remove the caps from the socket bolts.
Remove the four socket bolts and grab rail.

Remove the two trim clips and socket bolts.
Remove the rear cowl by pulling it back.

Installation is in the reverse order of removal.

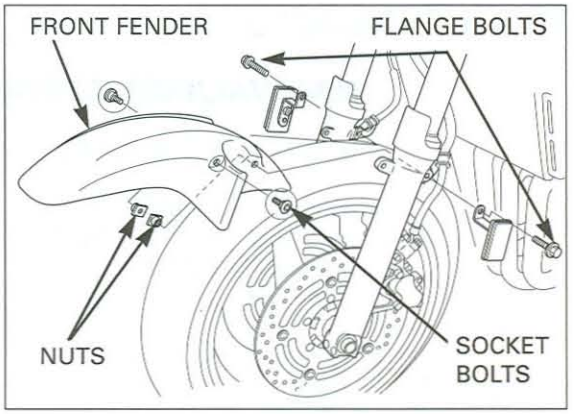


FRONT FENDER

REMOVAL/INSTALLATION

Remove the brake hose clamp bolts and reflectors.
Remove the front fender mounting socket bolts/nuts and flange bolts.
Remove the front fender.

Installation is in the reverse order of removal.



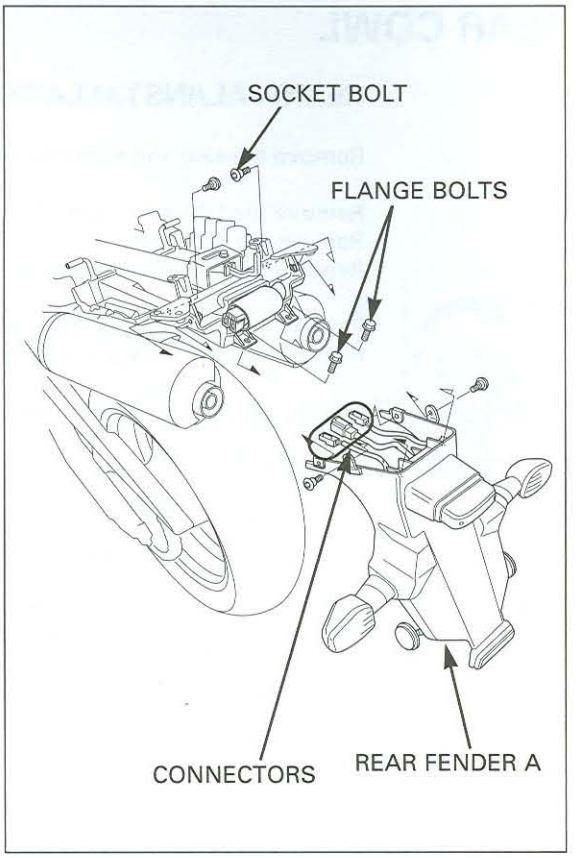
REAR FENDER A

REMOVAL/INSTALLATION

Remove the rear cowl (page 2-3).

Remove the following:
- R./L. turn signal light 2P connector.
- License light 2P connector.

Remove the socket bolts/nuts and flange bolts.
Remove the rear fender A.
Installation is in the reverse order of removal.



REAR FENDER B

REMOVAL/INSTALLATION

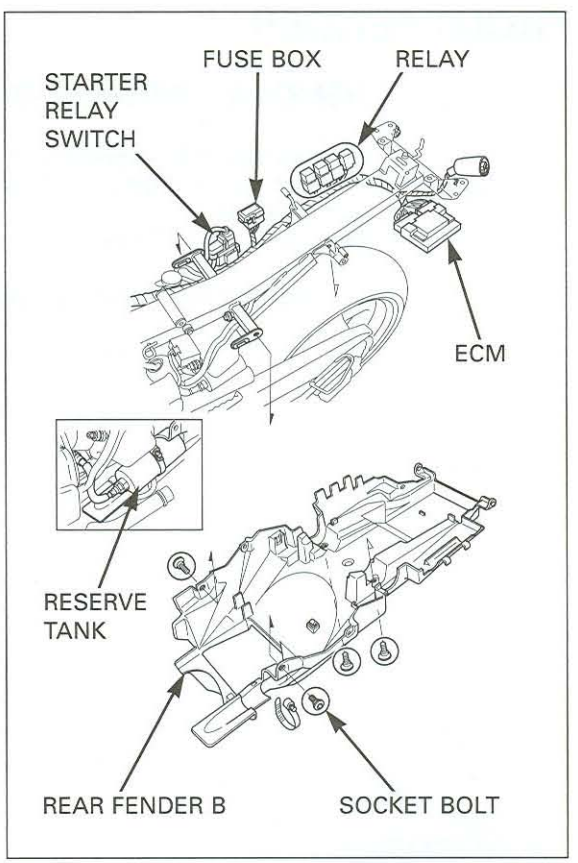
Remove the rear fender A (see upper).

Remove the following:
- Rear shock absorber reserve tank
- Starter relay switch
- Fuse box
- Fan control relay
- Fuel cut relay
- Engine stop relay
- Turn signal relay
- PGM-FI/IGN unit/Engine control module(ECM)

Do not let the PGM-FI/IGN unit/Engine control module(ECM) hang free.

Remove the socket bolts and flange bolts.
Remove the rear fender B from the frame.

Installation is in the reverse order of removel.



MUFFLER/EXHAUST PIPE

MUFFLER

REMOVAL

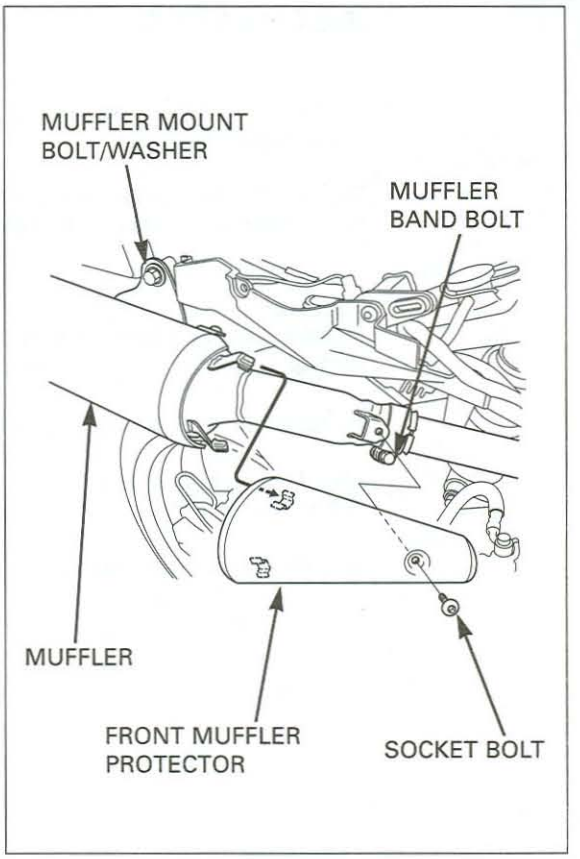
Remove the rear cowl (page 2-3).

Remove the socket bolt and remove the front muffler protector by pulling it forward.

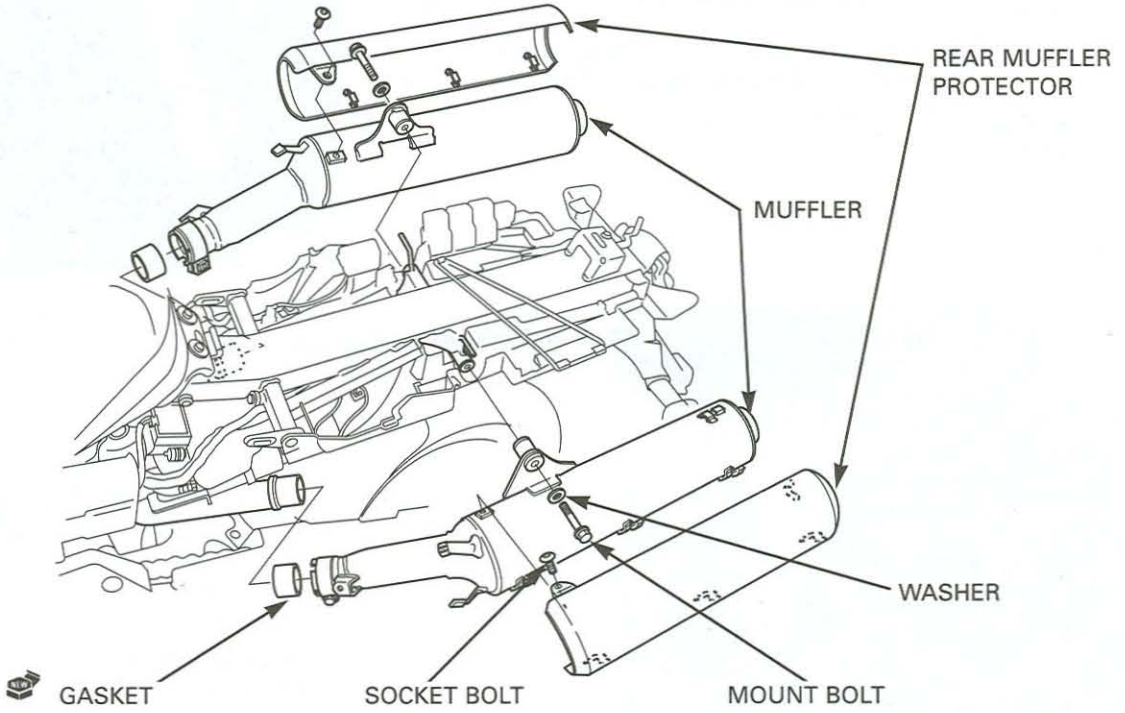
Loosen the muffler band bolt.

Remove the muffler mounting bolt and washer.

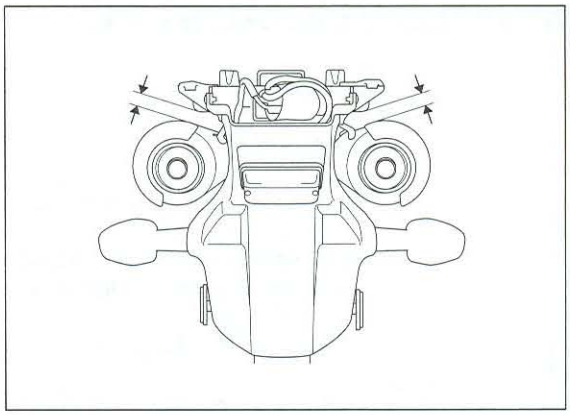
Remove the muffler.



DISASSEMBLY/ASSEMBLY



INSTALLATION



Make sure the clearance of the muffler protector and rear fender B is equal on both sides.

Install the muffler and loosely tighten the muffler mounting bolts/washer.

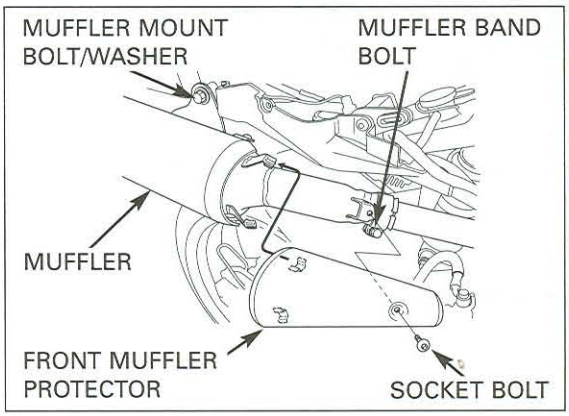
Tighten the muffler mounting bolts first, then tighten the muffler band bolts to the specified torque.

TORQUE:
Muffler mounting bolt: 27 N•m (2.8 kgf•m, 20 lbf•ft)
Muffler band bolt: 27 N•m (2.8 kgf•m, 20 lbf•ft)

Recheck the clearance of the muffler and protector.

Install the front muffler protector and tighten the socket bolt securely.

Install the rear cowl (page 2-3).



If you remove the exhaust joint pipe, remove the swingarm (refer to section 14).

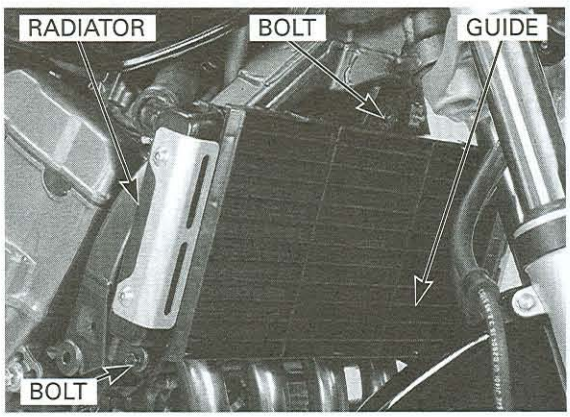
EXHAUST PIPE

REMOVAL

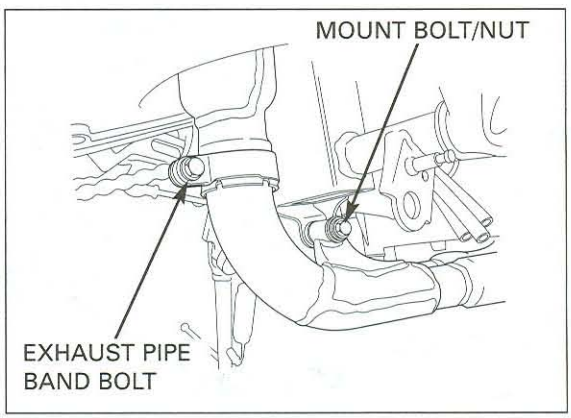
Remove the muffler (page 2-5).

Remove the two radiator mounting bolts.
Remove the radiator guide from the frame and move the radiator forward.

Do not damage the water hoses.



Loosen the exhaust pipe band bolt and exhaust pipe mounting bolts/nuts.



Do not damage the swingarm by the exhaust joint pipe when removing the exhaust pipe.

Remove the exhaust pipe joint nuts, exhaust pipe mounting bolt, washer and nut.

Remove the exhaust pipe and gaskets.

INSTALLATION

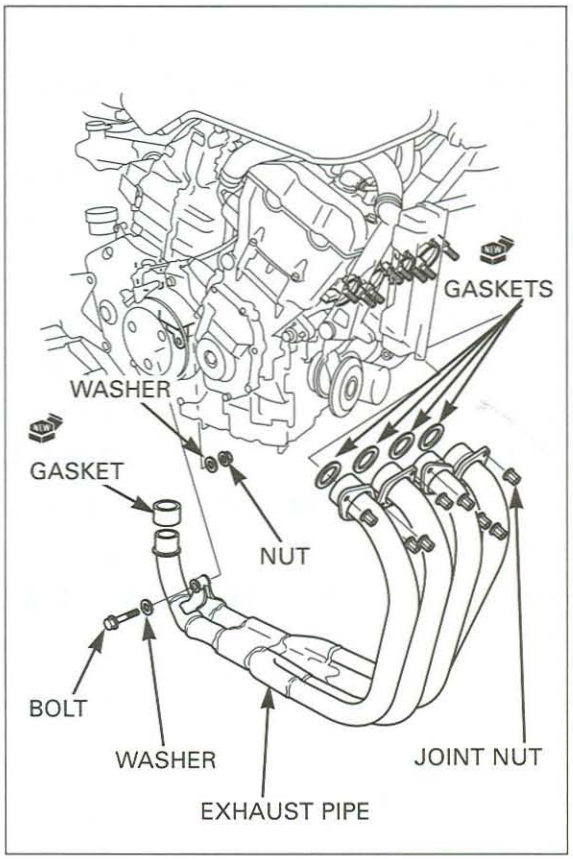
Always replace the exhaust pipe gaskets with new ones.

Install the new exhaust pipe gaskets and exhaust joint pipe gasket.

Do not damage the swingarm by the exhaust joint pipe when installing the exhaust pipe.

Install the exhaust pipe and loosely tighten the exhaust pipe joint nuts, exhaust pipe mounting bolts, washers and nuts.

Install the muffler (page 2-6).

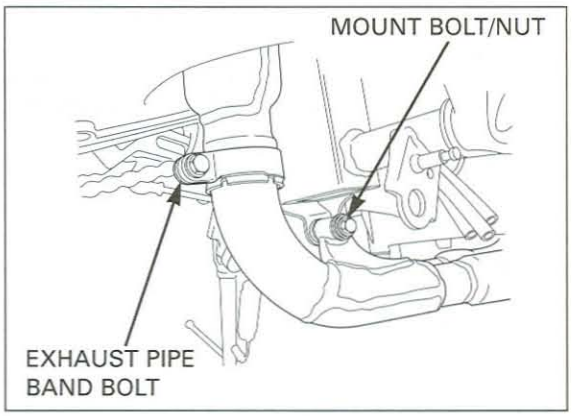


Tighten the bolt/nut to the specified torque as follows.

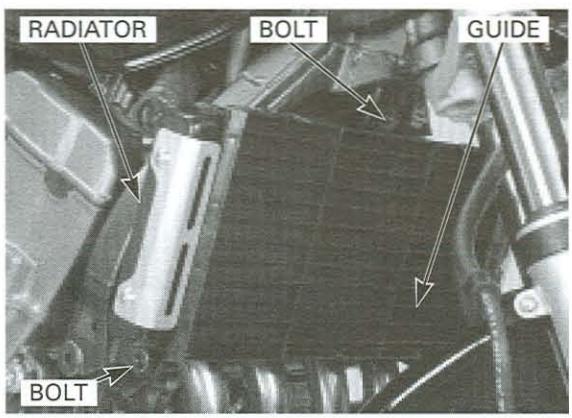
TORQUE:

1. **Exhaust pipe joint nut:**
   20 N•m (2.0 kgf•m, 14 lbf•ft)
2. **Exhaust pipe band bolt:**
   27 N•m (2.8 kgf•m, 20 lbf•ft)
3. **Exhaust pipe mount bolt/nut:**
   27 N•m (2.8kgf•m, 20 lbf•ft)

Recheck the clearance of the muffler and protector (page 2-6).



Install the radiator to the frame.
Install and tighten the radiator mounting bolts securely.



3. MAINTENANCE

SERVICE INFORMATION

GENERAL

- Place the motorcycle on a level ground before starting any work.
- Gasoline is extremely flammable and is explosive under certain conditions.
- Work in a well ventilated area. Smoking or allowing flames or sparks in the work area or where the gasoline is stored can cause a fire or explosion.
- If the engine must be running to do some work, make sure the area is well ventilated. Never run the engine in an enclosed area.
- The exhaust contains poisonous carbon monoxide gas that may cause loss of consciousness and may lead to death. Run the engine in an open area or with an exhaust evacuation system in an enclosed area.